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Fluid Control Components for Beverage Dispensers

Solenoid Valves, Pressure Switches
for Coffee Machines and Hot Drinks Distributors



ENGINEERING YOUR SUCCESS.



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Introduction

Parker Fluid Control Division Europe is your ideal partner offering the broadest range of solutions for Beverage Dispensers.

Thanks to Parker's great expertise and attitude to innovate we are today in the position to offer a broad range of robust and exclusive solutions.

In fact, all our products have been developed in order to achieve the best performances in high demanding Professional equipment.

Market segments

- Professional Coffee Machines
- Vending distributors for hot drinks
- Semi-Professional and Domestic Coffee Machines
- Automatic Water Dispensers

Applications

Typical applications in Beverage Dispensers are:

- Water loading control of a boiler
- Steam control
- Cold, hot and superheated water shut-off
- Cold water and steam mixing
- Steam pressure control (Pressure Switch)

Benefits

Parker was the first company developing the **ruby sealing** system for solenoid valves. Our expertise in this technology makes our product extremely efficient against limescale build-up.

High performing and low power consumption electrical parts, with a wide range of configurations and approvals are available.

The strong and robust design provides you with high reliability minimizing the risk of failures when your equipment is operating and avoiding downtime.



Technical Information about solenoid valves

General Information

Solenoid valves are as electro-mechanic devices for interrupting or diverting the flow of fluids by opening or closing one or more orifices.

The solenoid valve is a combination of three basic components:

1. An electromagnet consisting of a solenoid (windings) and a magnetic yoke.
2. A moveable plunger (which, in some cases directly opens and closes the valve).
3. A valve body with an orifice opened or closed by plunger or diaphragm to enable or prevent flow of the medium.

Operating principles

The term "solenoid" refers to operator and coil, also known as "pilot" or "magnetic actuator".

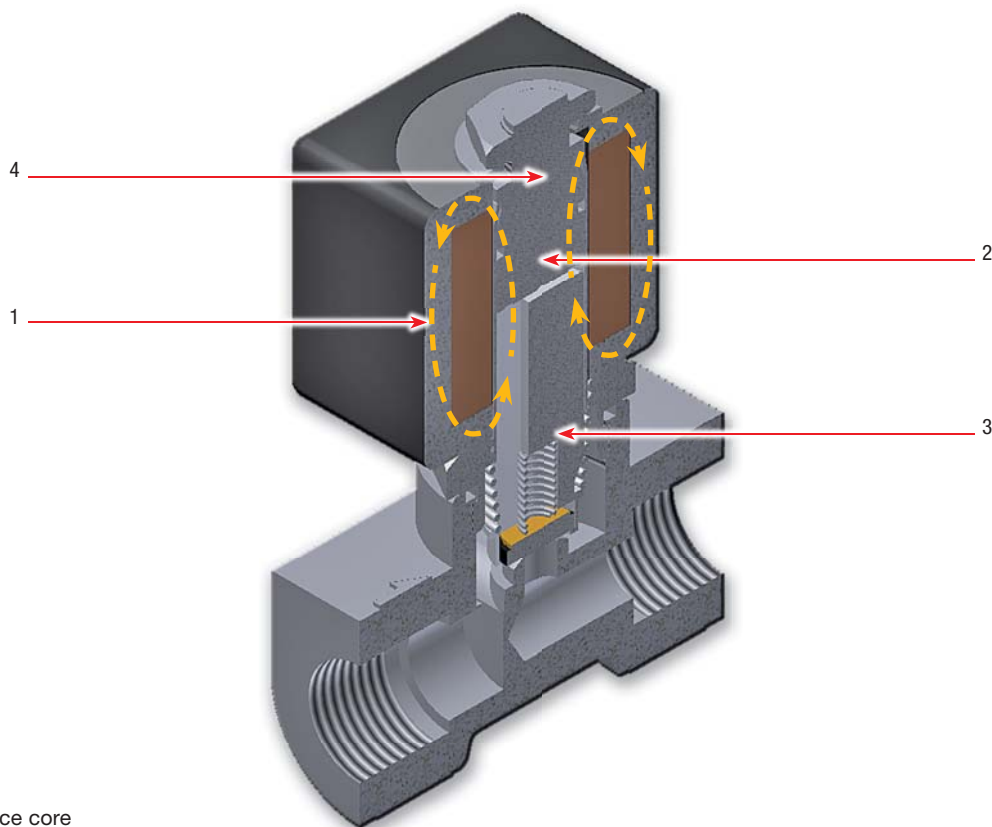
The coil consists of capillary copper wire wound on a support reel. When electric current is fed into the coil magnetic flow lines are generated which are stronger in the centre of the coil.

This magnetic flow raises the moveable plunger in the coil until it brings it into contact with the pole piece.

The valve body has an orifice through which the liquid or gas flows when the valve is open.

The moveable plunger has an integral seat which when the solenoid coil is energised, moves off the valve (direct operated) orifice or diaphragm (pilot operated) orifice opening the valve.

When the coil is de-energised, a return spring brings the plunger back in the original closing position, thus cutting off the flow of the fluid.



1. Flux
2. Pole piece core
3. Plunger
4. Copper wire

Basic components of a solenoid valve

Valve body:	Main part of the solenoid valve including ports, seats and orifice passages.
Solenoid tube assembly:	Cylinder, in stainless steel, hermetically sealed and closed at one end. It is the guide channel of the moveable plunger which is moved magnetically. The solenoid coil is fitted on the external side of the enclosing tube.
Moveable plunger:	Made by ferritic stainless steel, it is attracted by the solenoid magnetic field and slides inside the tube.
Plunger spring (or return spring):	Used to hold the moveable plunger in position and to return it into its position when de-energized.
Seat seal:	Mounted on the moveable plunger, it is used to close a valve main orifice or a pilot orifice.
Electromagnet (or solenoid coil):	Electrical part consisting of a copper windings (solenoid) along with, with a magnetic yoke (armature), when electric current flows through, it generates a magnetic flux attracting the moveable plunger.



Technical vocabulary for using the tables

The basic technical features of each solenoid valve model are indicated in the tables with the following headings:

Port Size:	Fitting dimensions are defined as threaded in inches (G) or sub-base, when a flat interface for ports is adopted.
Orifice:	Main orifice diameter in millimetres (nominal diameter).
Flow Factors:	Defined as the quantity of water, temp. between +5°C and +30°C, which flows through the solenoid valve with a pressure drop of 1 bar (100 KPa-0.1 MPa), in m ³ /h (cubic metres per hour) and in l/min (liters per minute).
Minimum pressure:	The lowest differential pressure required for operation, in bar.
Maximum differential pressure (MOPD):	The highest working differential pressure with 90% of the rated voltage (-10% V _n) applied to the solenoid coil for AC) and with 95% of the rated voltage (-5% V _n) (for DC).
Fluid maxi. temperature:	Maximum admissible temperature for the media used. In °C.
Seat disc:	Material used for the seat discs.
Pressure Vessel:	Ordering code referring to the pressure vessel only. Standard housing (washer, nut, aluminium plate) is included with the pressure vessel.
Electrical part:	Compatible electrical part reference.
Power consumption:	Power consumption of a specific electrical part on selected pressure vessel, rated by AC and DC, in W. Power consumption must be considered in cold condition for the coil, at T _{Amb} : +20°C. For 483510, 481865 and 496081 series, power consumption indicated in the tables must be considered in warm conditions. See also details in each electrical part description (pages 36-44).
Weight:	Weight of the complete valve without accessories, in grams.
Safe Body Working Pressure:	Ref. EN 1333:2007 (PN) the maximum admissible pressure at 20°C which can be applied to the solenoid valve to check the tightness of the mechanical seals (threads, welds) and the mechanical resistance of the materials.

Valve identification: Model Reference and Production Date

- 7121ZBG** Model Reference
- G** Manufacturing Location "Gessate"
- 10** Week
- 11** Year



- E131F4304** Model Reference
- G** Manufacturing Location "Gessate"
- 10** Week
- 11** Year



Note:
For electrical part identification, please find the coil model and voltage on the coil mark.

Pressure Conversion Table

bar	N/cm ²	MPa	Psi
0.1	1	0.01	1.45
0.2	2	0.02	2.90
0.5	5	0.05	7.25
1	10	0.1	14.50
2	20	0.2	29.01
3	30	0.3	43.51
4	40	0.4	58.01
5	50	0.5	72.52
6	60	0.6	87.02
7	70	0.7	101.52
8	80	0.8	116.03
9	90	0.9	130.53
10	100	1	145.03
11	110	1.1	159.54
12	120	1.2	174.04
13	130	1.3	188.54
14	140	1.4	203.05
15	150	1.5	217.55
16	160	1.6	232.05
17	170	1.7	246.56
18	180	1.8	261.06
19	190	1.9	275.56
20	200	2	290.07
25	250	2.5	362.58
30	300	3	435.10
40	400	4	580.13
50	500	5	725.17
60	600	6	870.20
70	700	7	1015.23
80	800	8	1160.26
90	900	9	1305.30
100	1000	10	1450.33

$$K = ^\circ C + 273$$

$$^\circ F = (^\circ C \times 9/5) + 32$$

$$^\circ C = (^\circ F - 32) \times 5/9$$

Flow Rate conversion table

l/min	m ³ /h	l/min	m ³ /h	l/min	m ³ /h
0.1	0.01	25	1.5	190	11.4
0.2	0.01	30	1.8	200	12
0.5	0.03	35	2.1	250	15
1	0.06	40	2.4	300	18
1.5	0.09	45	2.7	350	21
2	0.12	50	3.0	400	24
2.5	0.15	60	3.6	450	27
3	0.18	70	4.2	500	30
3.5	0.21	80	4.8	550	33
4	0.24	90	5.4	600	36
4.5	0.27	100	6.0	650	39
5	0.30	110	6.6	700	42
6	0.36	120	7.2	750	45
7	0.42	130	7.8	800	48
8	0.48	140	8.4	850	51
9	0.54	150	9.0	900	54
10	0.60	160	9.6	950	57
15	0.90	170	10.2	1000	60
20	1.20	180	10.8	-	-

$$\text{m}^3/\text{h} = \text{l}/\text{min} \times 0.06$$

$$\text{l}/\text{min} = \text{m}^3/\text{h} \times 16.67$$

$$\text{m}^3/\text{sec} = \text{m}^3/\text{h} \times 2.778 \times 10^{-4}$$

$$\text{m}^3/\text{sec} = \text{l}/\text{min} \times 1.667 \times 10^{-5}$$

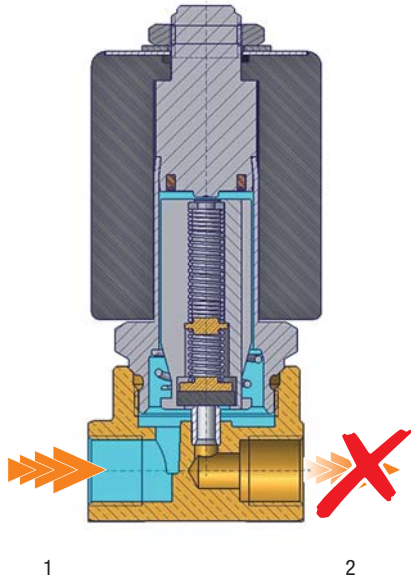
Steam (dry saturated) Data

P ₂ bar	Temp. °C	Vs m ³ /Kg	P ₂ bar	Temp. °C	Vs m ³ /Kg
0.01	6.6	131.60	1.5	110.8	1.18
0.02	17.1	68.30	2	119.6	0.90
0.03	23.7	68.30	2.5	126.8	0.73
0.04	28.6	46.50	3	132.9	0.62
0.05	32.5	28.70	3.5	138.2	0.53
0.06	35.8	24.20	4	142.9	0.47
0.08	41.1	18.50	4.5	147.2	0.42
0.1	45.4	15.00	5	151.1	0.38
0.2	59.7	7.80	5.5	154.7	0.35
0.3	68.7	5.33	6	158.1	0.32
0.4	75.4	4.07	6.5	161.2	0.30
0.5	80.9	3.30	7	164.2	0.28
0.6	85.5	2.79	7.5	167	0.26
0.7	89.5	2.41	8	169.6	0.25
0.8	93.0	2.13	8.5	172.1	0.23
0.9	96.2	1.91	9	174.5	0.22
1	99.1	1.73	9.5	176.8	0.21

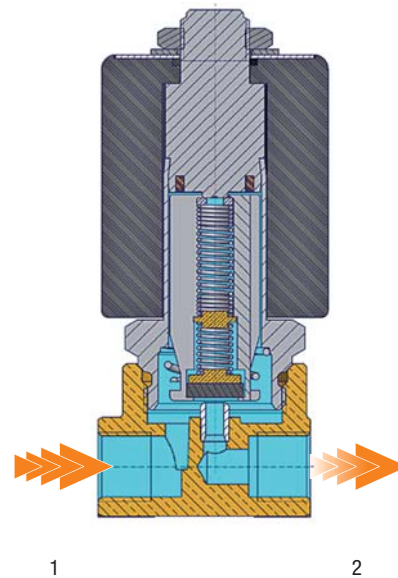
Functional Scheme

2 Way pipe mounting - Direct operated - Normally closed

Coil not energized,
Plunger in the close position,
No flow.

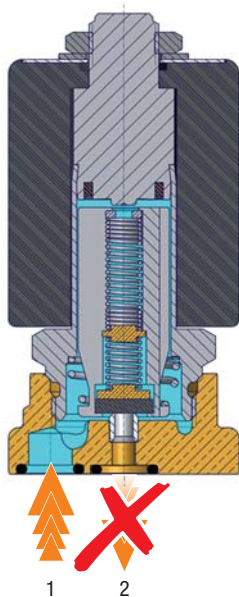


Coil energized,
Plunger in the open position,
Full flow.

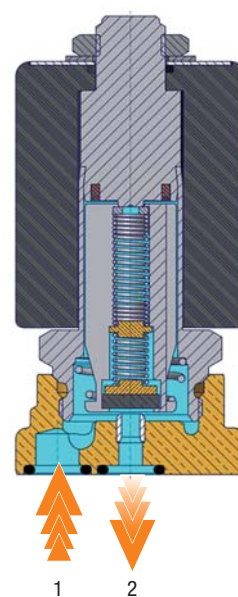


2 Way sub-base mounting - Direct operated - Normally closed

Coil not energized,
Plunger in the close position,
No flow.

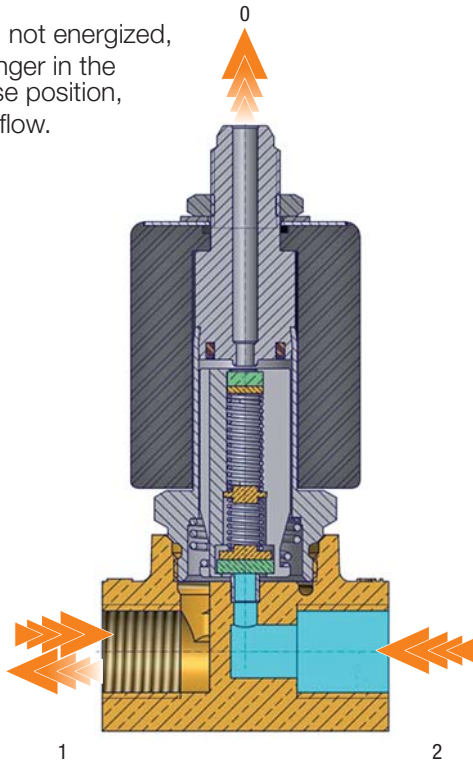


Coil energized,
Plunger in the open position,
Full flow.

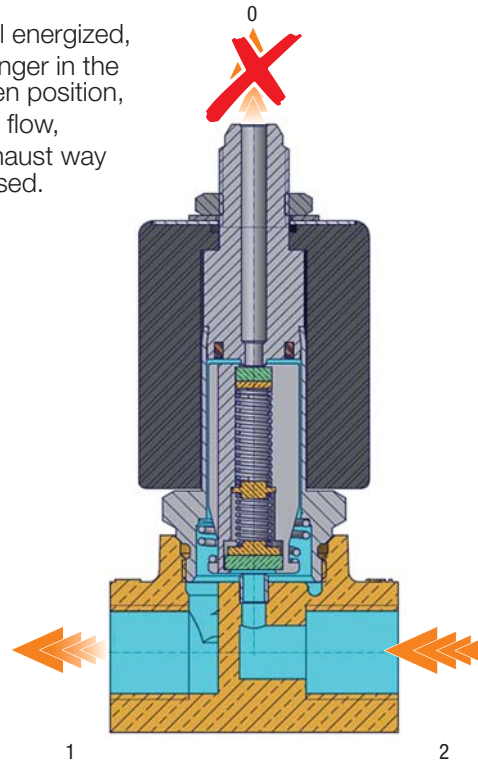


3 Way pipe mounting - Direct operated - Normally closed

Coil not energized,
Plunger in the
close position,
No flow.

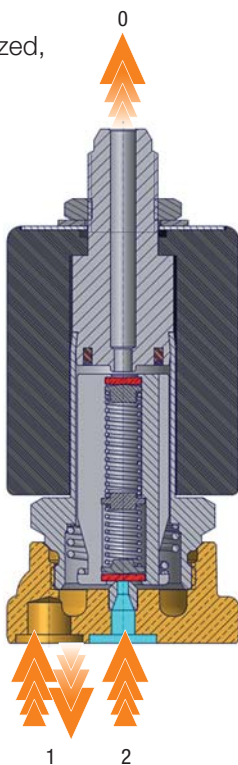


Coil energized,
Plunger in the
open position,
Full flow,
Exhaust way
closed.

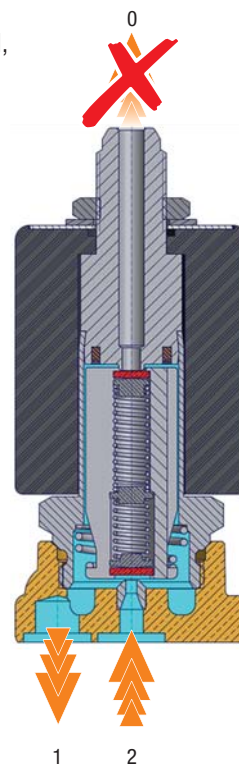


3 Way sub-base mounting - Direct operated - Normally closed

Coil not energized,
Plunger in the
close position,
No flow.



Coil energized,
Plunger in the
open position,
Full flow,
Exhaust
way closed.



General Description

Material Specifications:	A description of the materials used for each solenoid valve family.
Installation:	The valves can be mounted in any position. It is however recommended to install them with the coil in vertical position above the body.
Media:	These valves have been developed to achieve the best performances with cold and hot water, superheated water and steam. Within the main description of the family you will be able to find out the recommended media and application.
Electrical parts	Electrical parts compatible with each solenoid has been indicated directly in the main datasheets you will find at pages 18 to 35. Details about electrical parts specifications are available at pages 36-44. Please consult also the "How to order" section at page 50 on how to select the product configuration which fits your application requirements.

Product Selection

This catalogue has been designed to make selection as easy as possible. The structure allows you to find your valve step by step, beginning with the most basic features and gradually focusing on more and more precise details.

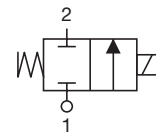
To make the selection easier we have included in each valve description an indication about typical applications, like water loading and cold water control, superheated water and steam control.

In the first column you will be able to identify the port size, and proceeding you will meet all the available product solution.

Solutions for Professional coffee machines



2/2 Pipe mounting Direct acting - Normally closed



146 Series

This product family has 1/8" and 1/4" ports and various flow rates. A robust design ensures good performances and high reliability against limescale build up.

A wide range of electrical parts can be used with this valve, including IP65 and IP67 solutions.

Typical application for 146 Series is cold water loading or hot water shut-off.

Fluids: Cold and hot water, within the media temperature limits.

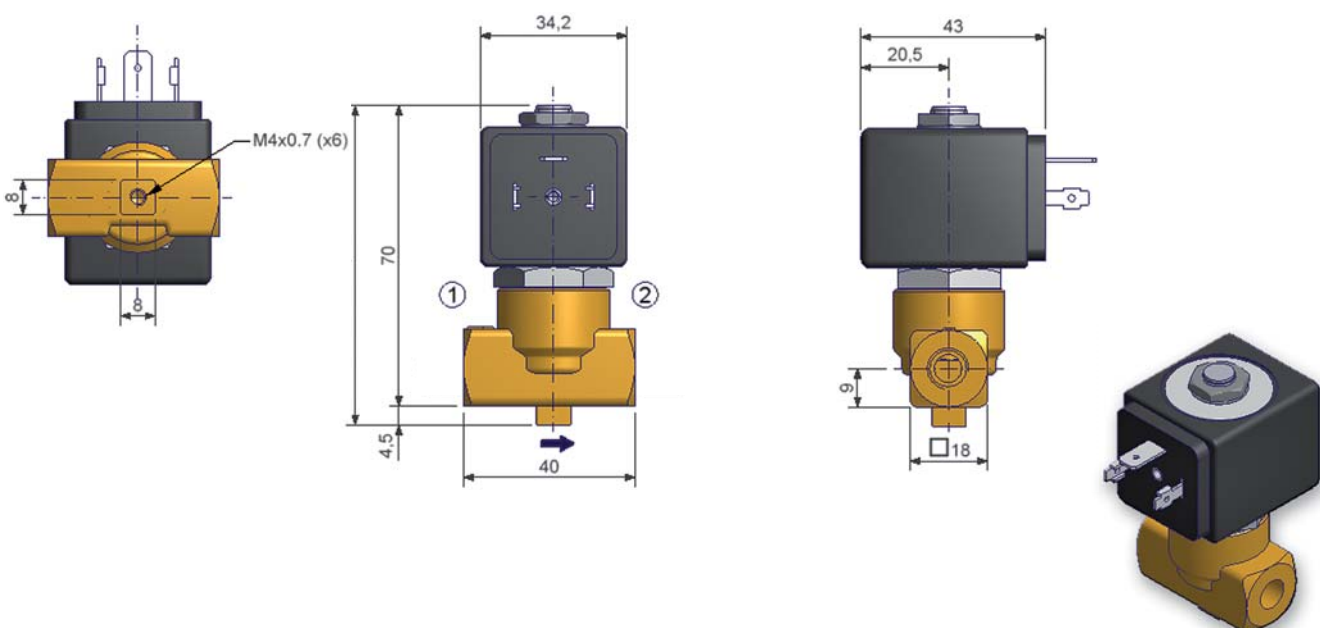
Valve body: Moulded brass, CW617N UNI EN 12165.

Seals: FKM

Sleeve and plungers: Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
					AC	DC								
1/8" G	2.5	0.19	3.1	0	10	5	140	FKM	146FV	ZB YB	12	9	340	1
	3.0	0.23	3.8	0	7	2	140	FKM	146HV	ZB YB	12	9	340	1
1/4" G	1.5	0.09	1.4	0	20	18	140	FKM	146SV	ZB YB	12	9	340	1
	2.5	0.19	3.1	0	10	5	140	FKM	146WV	ZB YB	12	9	340	1
	3.0	0.23	3.8	0	7	2	140	FKM	146YV	ZB YB	12	9	340	1

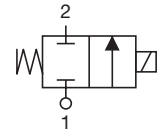
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 1

2/2 Pipe mounting Direct acting - Normally closed



140.2 Series

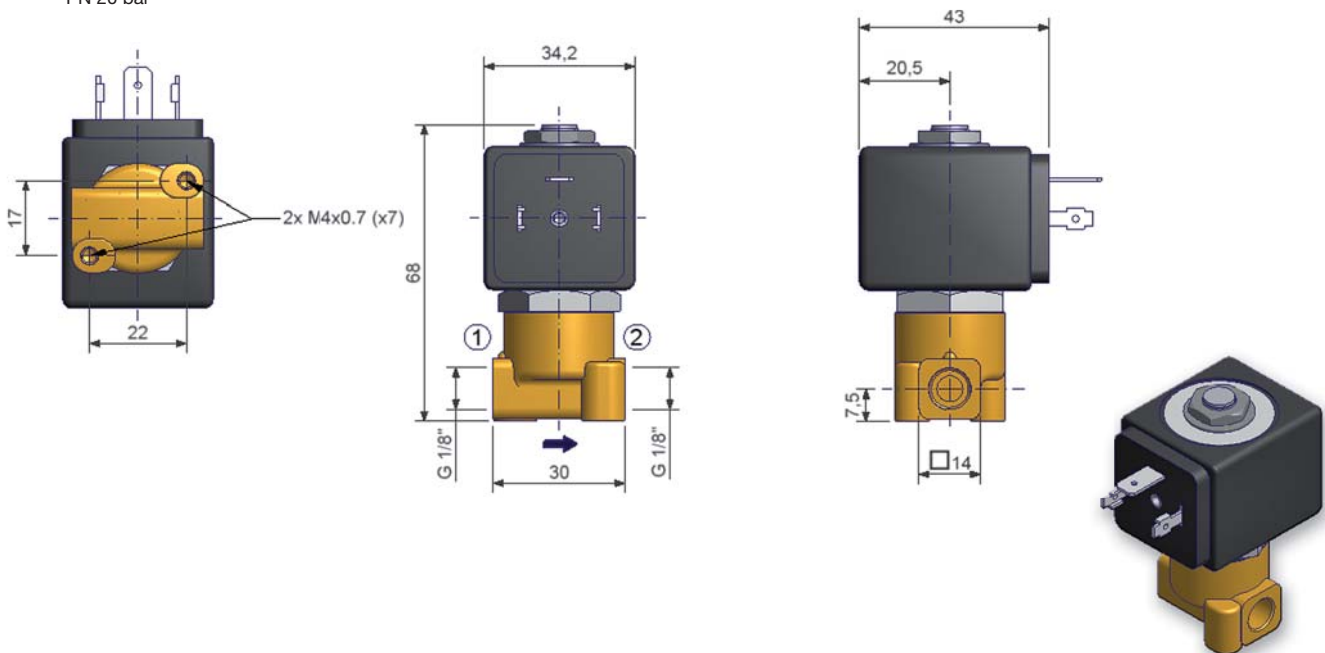
140.2 S series is a valuable solution for cold water, hot water and steam on-off control. Compact and robust at the same time, the stainless steel nozzle improves valve life, endurance and resistance to lime-scale build up effect. A wide range of electrical parts might be used with this valve, including IP65 and IP67 UL solutions.

Typical application for 140.2 Series is cold water loading function or hot water-steam on/off control.

- Fluids:** Hot water and steam, within the media temperature limits.
- Valve body:** Moulded brass, CW617N UNI EN 12165: Nickel plated brass for NSF certified versions.
- Seals:** Ruby/FDA FKM/EPDM.
- Plungers and nozzle:** Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref	Approvals
				Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC			
					AC	DC									
	2.5	0.19	3.1	0	13	-	140	Ruby	140.2IR	ZB YB	-	320	-	2	-
	2.5	0.19	3.1	0	10	-	140	EPDM	140.2HH	ZB YB	-	9	320	2	-
1/8" G	2.5	0.19	3.1	0	13	-	140	Ruby	140.2IRA.5	ZB YB	-	9	320	2	NSF
	2.5	0.19	3.1	0	10	-	140	FDA FKM	140.2HHA.5	ZB YB	-	9	320	2	NSF
	3.0	0.23	3.8	0	7	-	140	FDA FKM	140.2AVA.5	ZB YB	-	320	-	2	NSF

PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 2

2/2 Pipe mounting Direct acting - Normally closed

7121Z-121K Series

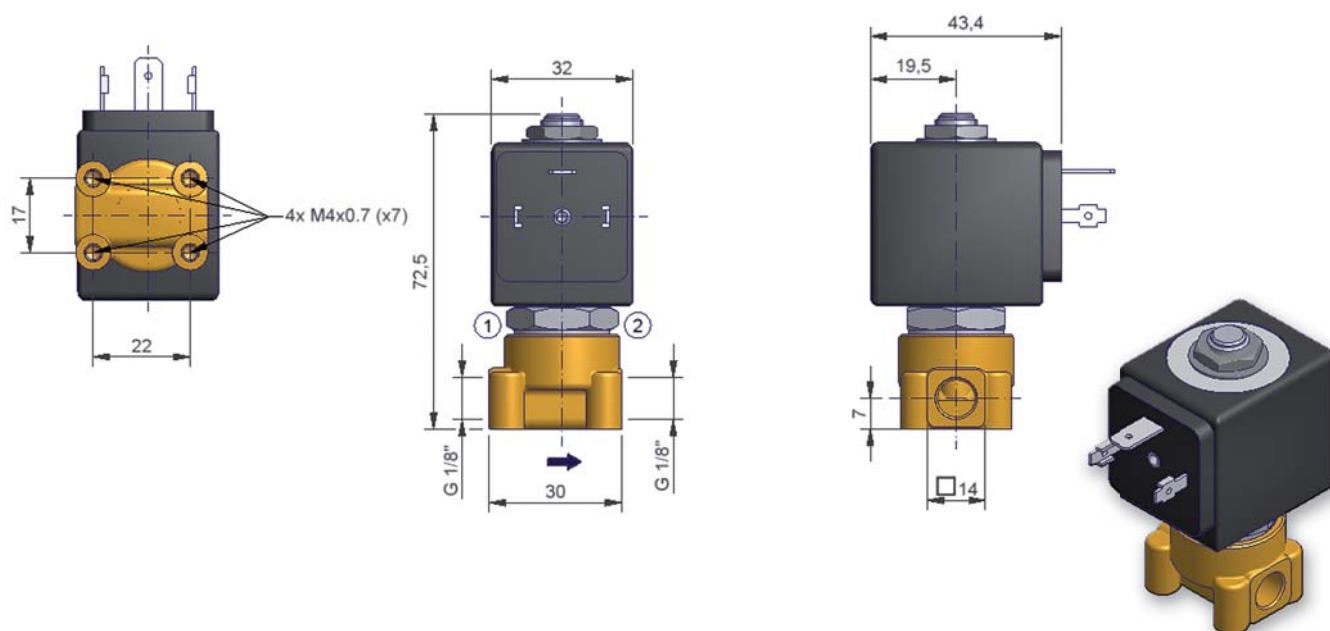
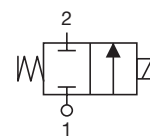
7121Z and 121K are the best solution when top-class performances are required, because of the entire stainless steel structure of the valve pilots. Compact and robust at the same time, the stainless steel nozzle improves valve life, endurance and resistance to lime-scale build up effect. A wide range of electrical parts might be used with this valve, including IP65 and IP67 UL solutions.

Typical application for 7121Z-121K Series is cold water loading function or hot water-steam on/off control.

Fluids:	Cold water, hot water and steam.
Valve body:	Moulded brass, CW617N UNI EN 12165/Nickel plated brass for NSF certified versions.
Seals:	FKM/FDA FKM/Ruby.
Sleeve, plungers and nozzle:	Stainless Steel.

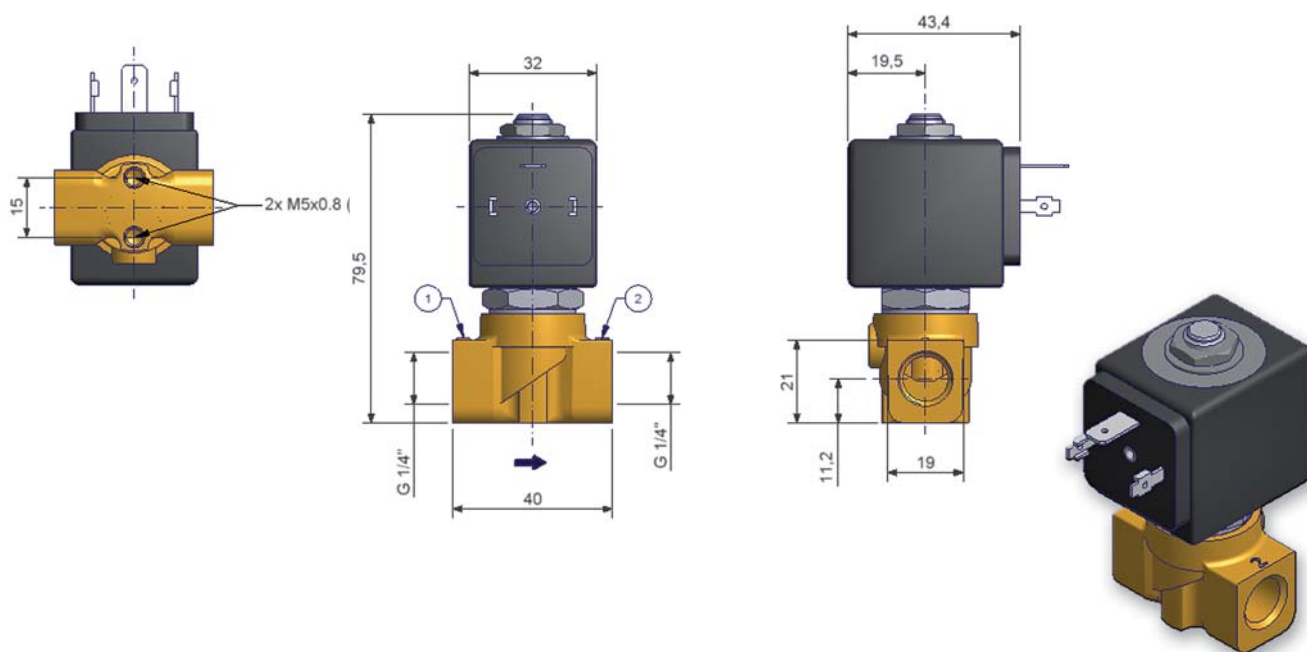
Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dim. Ref	Approvals
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC			
1/8" G	1.5	0.07	1.16	0	10	10	140	FKM	7121ZB1GV00-2995	481865	9	8	280	3	-
										483510	-	9			
										491514	16	13			
	2.5	0.17	2.8	0	10	10	140	FKM	7121ZBG1LV00-2995	481865	9	8	280	3	-
										483510	-	9			
										491514	16	13			
	2.5	0.17	2.8	0	10	10	140	Ruby	7121ZBG1LR00-2995	481865	9	8	280	3	-
										483510	-	9			
										491514	16	13			
	2.5	0.17	2.8	0	10	10	140	FDA FKM	7121ZBG1LVF0-2995	481865	9	8	280	3	NSF
										483510	-	9			
										491514	16	13			
2.5	0.17	2.8	0	10	10	140	Ruby	7121ZBG1LRF0-2995	481865	9	8	340	3	NSF	
									483510	-	9				
									491514	16	13				
1/4" G	2.5	0.17	2.8	0	10	10	140	FKM	121KSG001-2995	481865	9	8	340	4	-
										483510	-	9			
										491514	16	13			
	3.0	0.17	4.5	0	7	7	140	FKM	121KSG003-2995	481865	9	8	340	4	-
										483510	-	9			
										491514	16	13			
4.0	0.17	7.5	0	5	5	-	FDA FKM	121KSG012-2995	481865	9	8	340	4	-	
									483510	-	9				
									491514	16	13				

PN 20 bar



All dimensions are in mm

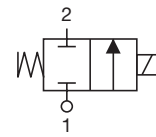
Dimensional Drawing N° 3



All dimensions are in mm

Dimensional Drawing N° 4

2/2 Pipe mounting Direct acting - Normally closed



161.4 Series

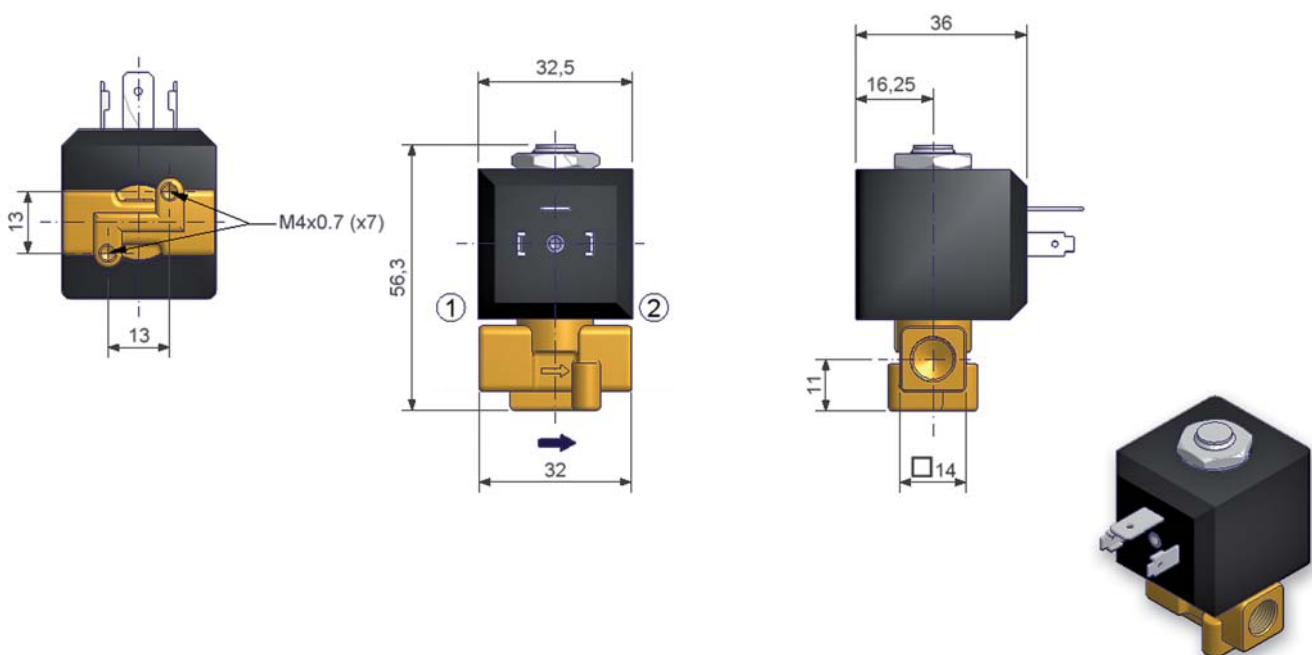
161.4 Series is a robust and compact solution with a good value for money. A wide range of product solutions including 1/8" and 1/4" ports and different flow rates are available. Compact design and small size operator make this valve a good solution whenever a space savings are targeted. A wide range of IP65 electrical parts might be used with this valve.

Typical application for 161.4 Series is cold water loading function or hot water on/off control.

- Fluids:** Cold and hot water, within the media temperature limits.
Valve body: Moulded brass, CW617N UNI EN 12165.
Seals: FKM
Plungers: Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
1/8" G	2.2	0.12	2	0	10	6	140	FKM	161.4AV	KT	10	9	200	5
1/4" G	2.2	0.12	2	0	10	6	140	FKM	161.4EV	KT	10	9	220	5

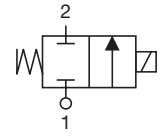
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 5

2/2 Pipe mounting Direct acting - Normally closed



746 Series

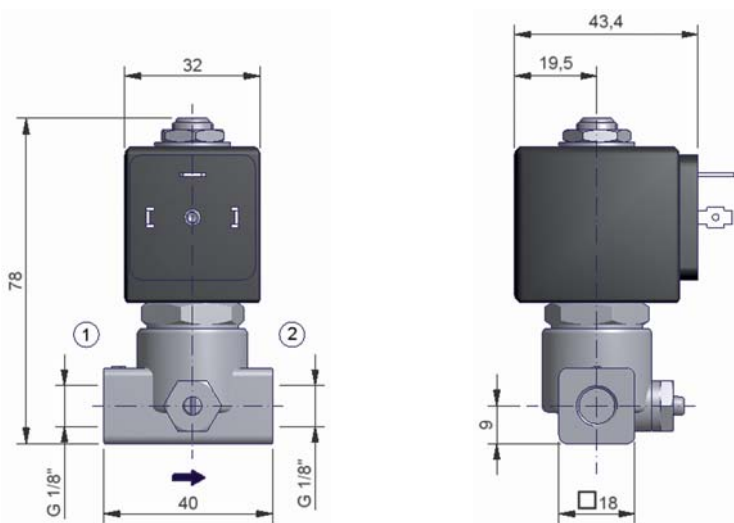
746 Series is a 2/2 valve with a precise manual flow regulator integrated. The structure of the flow control is made by stainless steel to ensure reliability. Therefore the robust desing makes this part less sensitive to deterioration and increase the repetitivity and precision and in calibration during the life of the valve.

A wide range of electrical parts might be used with this valve, including IP65 and IP67 UL solutions.

- Fluids:** Cold and hot water, within the media temperature limits.
- Valve body:** Nickel plated moulded brass.
- Seals:** FKM
- Sleeve, plungers:** Stainless Steel.
- Regulation Screw to adjust flow rate:** Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
1/8" G	1.5	0.05	0.83	0	15	15	140	FKM	746BV-RF.6	481865	9	8	300	6
										483510	-	9		
										491514	16	13		

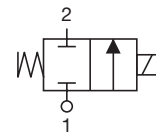
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 6

2/2 Sub-base mounting Direct acting - Normally closed



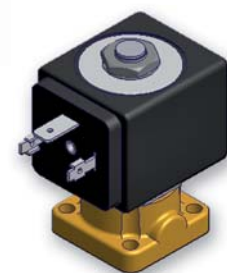
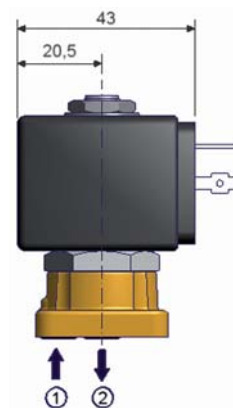
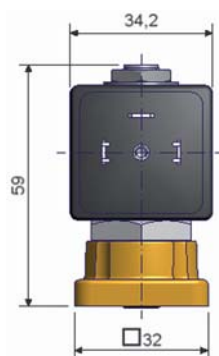
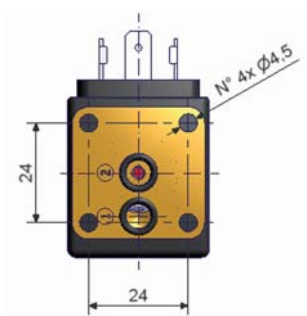
125 Series

125 Series has a robust design and provides good performances and high reliability. A wide range of electrical parts might be used with this valve, including IP65 and IP67 solutions. Typical application for 125 Series is water loading function, as well as superheated water shut-off.

- Fluids:** Cold and hot water, within the media temperature limits.
Valve body: Moulded brass, CW617N UNI EN 12165.
Seals: FKM
Sleeve and plungers: Stainless Steel.

Connection	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
Sub-Base	2.0	0.12	2	0	15	-	140	FKM	125BV	ZB	-	9	270	7
										YB	-	9		
Sub-Base	2.5	0.18	3	0	10	-	140	FKM	125CV.2	ZB	-	9	270	7
										YB	-	9		

PN 20 bar

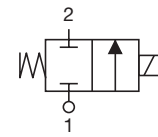


Note: for 125 BV flow path is 2 = inlet/1 = outlet.

All dimensions are in mm

Dimensional Drawing N° 7

2/2 Sub-base mounting Direct acting - Normally closed



121FS Series

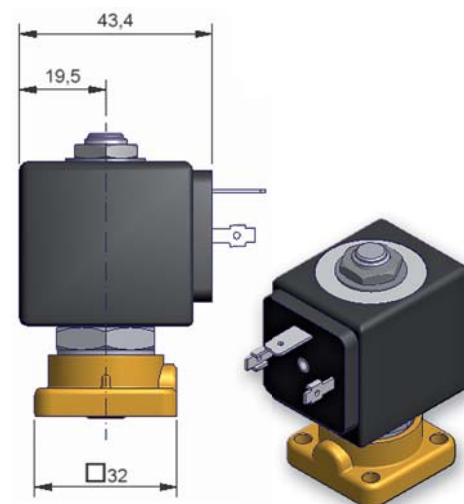
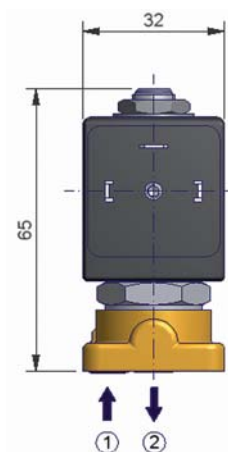
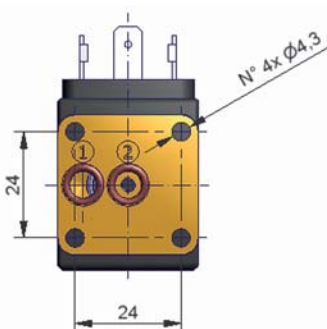
121FS Series is an high performing 2/2 sub base mounting solution, because of the entire stainless steel structure of the valve pilots. Compact and robust at the same time, the stainless steel nozzle improves the valve life and its behaviour against lime-scale build up effect. A wide range of electrical parts might be used with this valve, including IP65 VDE and UL solutions.

Typical application for 121FS Series is water loading function, as well as superheated water on-off control.

- Fluids:** Cold and hot water, within the media temperature limits.
Valve body: Moulded brass, CW617N UNI EN 12165/Nickel plated brass for 121FSG001-2995.
Seals: FKM/Ruby/FDA FKM.
Sleeve, plungers and nozzle: Stainless Steel.

Connection	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
Sub-Base	1.5	0.09	1.5	0	20	20	140	FDA-FKM	121FSG001-2995	481865	9	8	260	8
										483510	-	9		
										491514	16	13		
Sub-Base	3.0	0.21	3.5	0	10	7	140	FKM	121F4317-2995	481865	9	8	260	8
										483510	-	9		
										491514	16	13		
Sub-Base	3.5	0.27	4.5	0	10	-	140	Ruby	121FS1651A-2995	481865	-	8	260	8
										483510	-	9		
										491514	16	13		
Sub-Base	3.5	0.27	4.5	0	10	-	140	FKM	121FS1651B-2995	481865	-	8	260	8
										483510	-	9		
										491514	-	13		

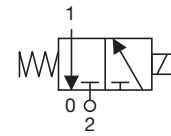
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 8

3/2 Pipe mounting Direct acting - Normally closed



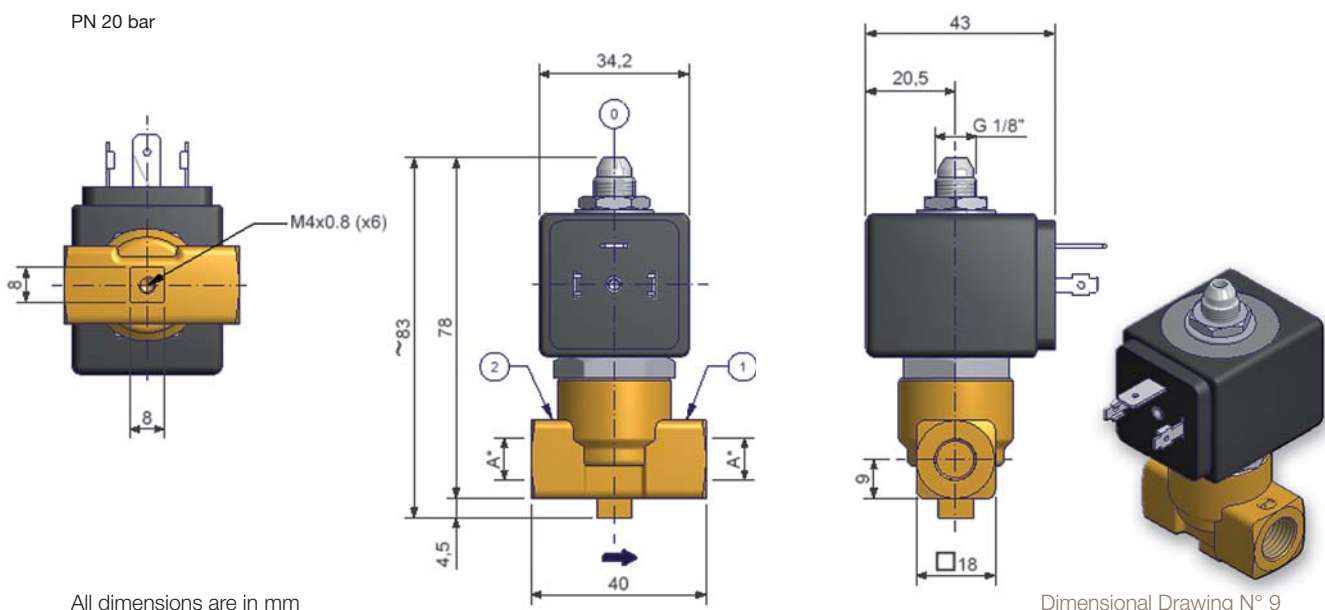
141 Series

141 Series wide range includes 1/8" and 1/4" ports and different flow rates. A robust design ensures good performances and reliability. A wide range of electrical parts might be used with this valve, including IP65 and IP67 solutions. Typical application for 141 Series is the superheated water/steam on/off.

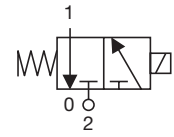
- Fluids:** Cold and hot water, steam within the media temperature limits.
- Valve body:** Moulded brass, CW617N UNI EN 12165:98/Nickel plated brass for NSF certified version.
- Seals:** FKM/Ruby/FDA-FKM.
- Plungers:** Stainless Steel.
- Nozzle:** Stainless steel for 141.2YV and 141.2YVA.5.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref	Approvals
		m ³ /h	l/min	Minimum Pressure	Maximum Differential Pressure	AC			DC	Pressure Vessel	Electrical Part	DC			
1/8" G	1.5	0.07	1.2	0	20	-	140	FKM	141AV	ZB YB	-	9	360	9	-
	1.5	0.07	1.2	0	20	-	140	FDA-FKM	141AVA.5	ZB YB	-	9	360	9	NSF
	1.3	0.06	1	0	20	-	140	Ruby	141IR	ZB YB	-	9	369	9	-
	2.0	0.12	2	0	15	-	140	FKM	141BV	ZB YB	-	9	360	9	-
1/4" G	2.0	0.12	2	0	15	-	140	FKM	141FV	ZB YB	-	9	360	9	-
	2.5	0.16	2.7	0	9	-	140	FKM	141GV	ZB YB	-	9	360	9	-
	1.3	0.06	1	0	20	-	140	Ruby	141ER	ZB YB	-	9	360	9	-
	3.0	1.9	3.2	0	6	-	140	FKM	141.2YV	ZB YB	-	9	360	9	-
	3.0	1.9	3.2	0	6	-	140	FDA-FKM	141.2YVA.5	ZB YB	-	9	360	9	NSF

PN 20 bar



3/2 Pipe mounting Direct acting - Normally closed



131K Series

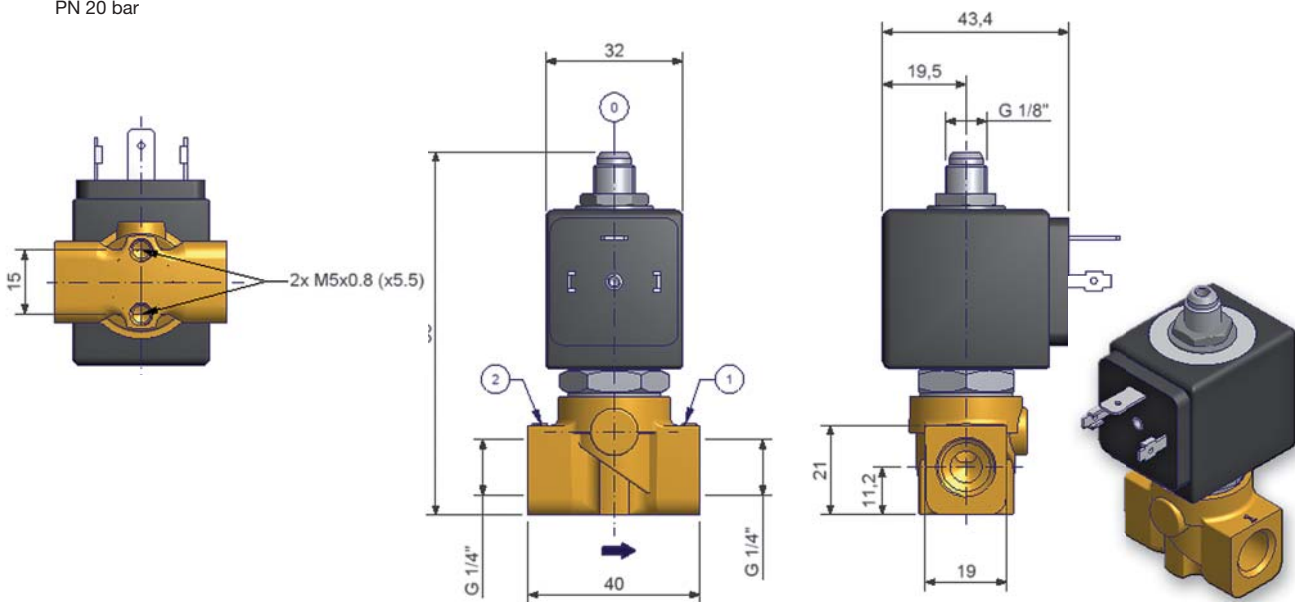
131K Series is the best solution when top-class performances are required, because of the entire stainless steel structure of the valve pilots. Compact and robust at the same time, the stainless steel nozzle improves the valve life and its behaviour against lime-scale build up effect. A wide range of electrical parts might be used with this valve, including IP65 and IP67 UL solutions.

Typical application for 131K Series is the superheated water and steam on/off control when high flow rate is required.

- Fluids:** Cold water, hot water and steam.
Valve body: Moulded brass, CW617N UNI EN 12165/Nickel plated brass for NSF certified version.
Seals: FKM-Ruby.
Sleeve, plungers and nozzle: Stainless Steel.

Port. Size G	Orifice mm	Flow Factors		Admissible Differential Pressure.bar			Fluid Maxi. Temp. C°	Seat Disc	Reference.Numbers		Power Consumption (W)		WT. (g)	Dim. Ref	Approvals
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC			
1/4".G	3.0	0.27	4.5	0	5	5	140	FKM	131KSG004-2995	481865	9	8	320	10	-
										483510	-	9			
		491514	16		13										
		E131K6304-2995	481865		9	8									
		E131K6304-299504	483510		9	-									
		E131K6304-299503	491514		14	13									
	131K6314-299503	491514	16	13	NSF										
	4.0	0.45	7.5	0	3	3	140	FDA FKM	131KSG003-2995	481865	9	8	320	10	-
										483510	-	9			
		491514	16		13										
		481865	9		8										
		483510	-		9										
491514		14	13		NSF										

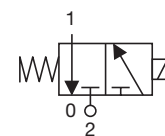
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 10

3/2 Sub-base mounting Direct acting - Normally closed



128 Series

128 Series is a compact and reliable 3/2 sub base valve for hot and superheated water. A robust design ensures good performances and reliability. A wide range of electrical parts might be used with this valve, including IP65 and IP67 solutions.

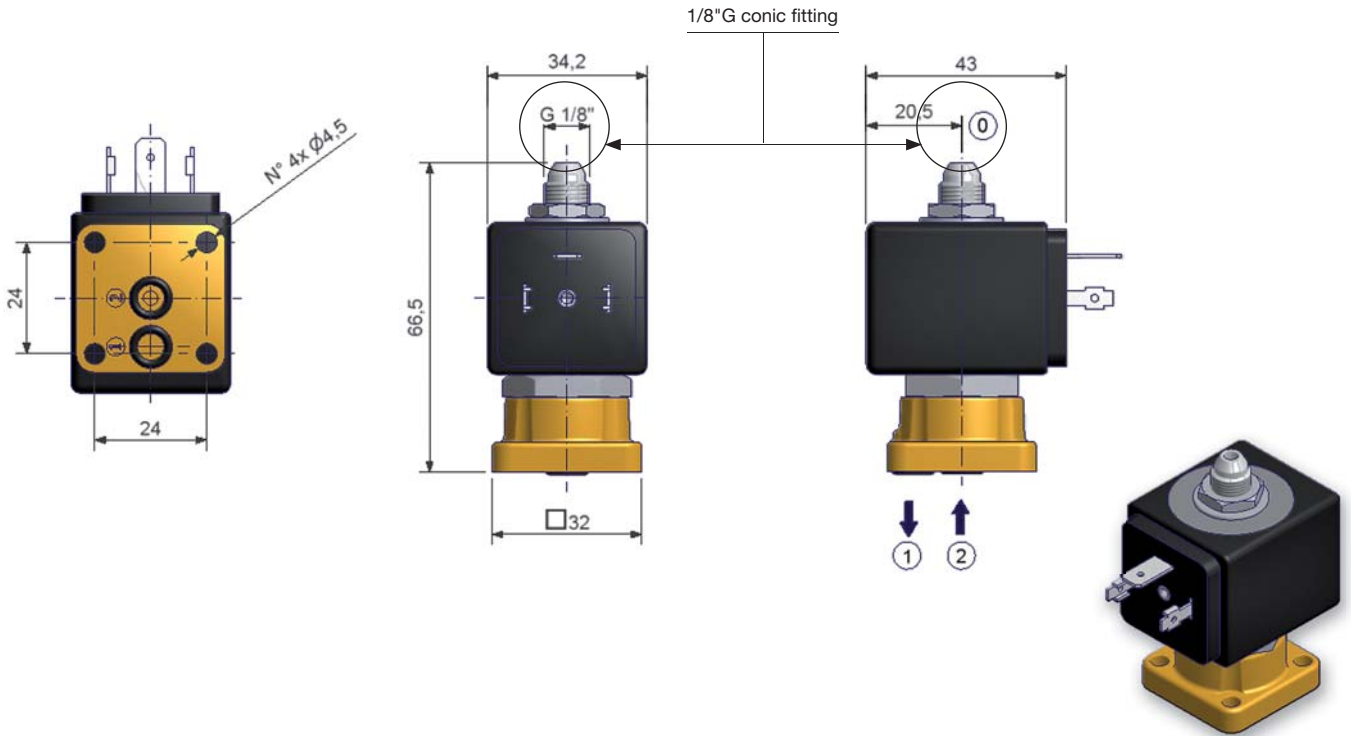
Typical application: superheated water and steam on/off control.

Fluids:	Hot water, steam within the media temperature limits.
Valve body:	Moulded brass, CW617N UNI EN 12165/Nickel plated brass for the NSF listed version.
Seals:	FKM-Ruby
Plungers:	Stainless Steel.
Nozzle:	Stainless Steel, Brass for 128IV.

Connection	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dim. Ref	Approvals
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC			
Flanged	1.3	0.06	1	0	20	10	140	FKM	128IV	ZB	-	9	280	11	-
										YB	-	9			
Flanged	1.3	0.06	1	0	20	10	140	Ruby	128IR	ZB	-	9	280	11	-
										YB	-	9			
Flanged	1.3	0.06	1	0	20	10	140	Ruby	128GR	ZB	-	9	280	12	-
										YB	-	9			
Flanged	1.3	0.06	1	0	20	10	140	Ruby	128IRA.5	ZB	-	9	280	11	NSF
										YB	-	9			

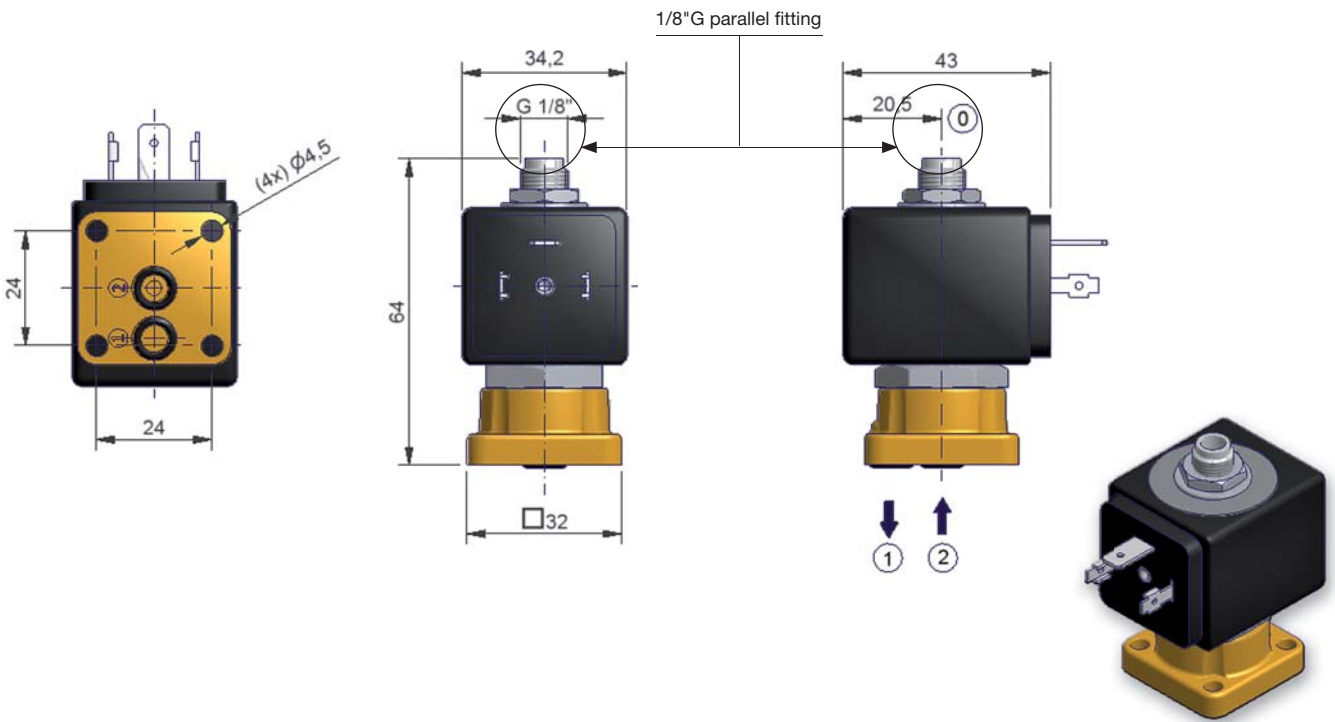
PN 20 bar





All dimensions are in mm

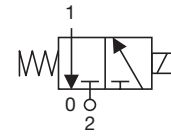
Dimensional Drawing N° 11



All dimensions are in mm

Dimensional Drawing N° 12

3/2 Sub-base mounting Direct acting - Normally closed



E131F Series

E131F Series is the best solution when top-class performances are required, because of the entire stainless steel structure of the valve pilot. Compact and robust at the same time, the stainless steel nozzle improves the valve life and its behaviour against lime-scale build up effect. A wide range of electrical parts might be used with this valve, including IP65 VDE and UL solutions.

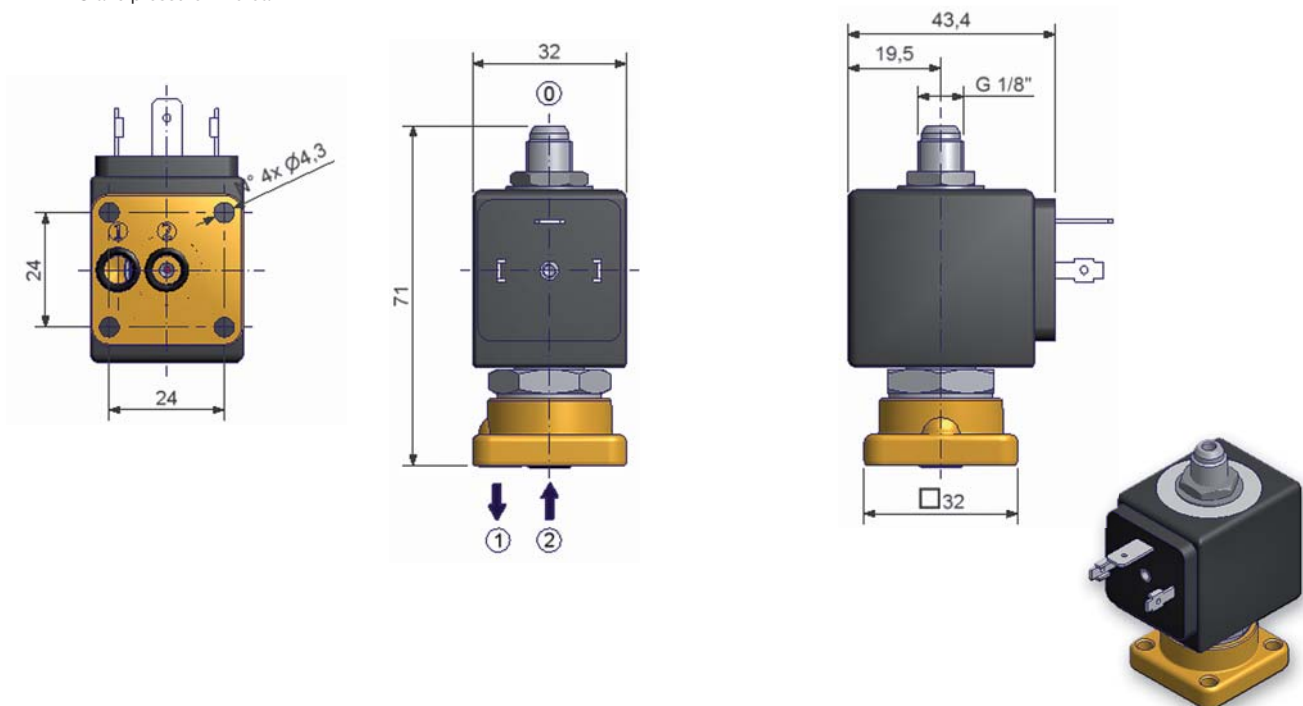
Typical application: superheated water and steam on/off control.

- Fluids:** Cold water, hot water and steam.
Valve body: Moulded brass, CW617N UNI EN 12165.
Seals: FKM-Ruby.
Sleeve, plungers and nozzle: Stainless Steel.

Connection	Orifice mm	Flow Factors		Admissible Differential Pressure.bar			Fluid Maxi. Temp. C°	Seat Disc	Reference.Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref.
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
Sub-Base	1.5	0.072	1.2	0	10*	10*	140	Ruby	E131F4304-299504	481865	9	8	260	13
										483510	-	9		
Sub-Base	1.5	0.072	1.2	0	10*	10*	140	Ruby	E131F4304-299503	491514	16	13	260	13
Sub-Base	2.5	0.130	2.2	0	7	7	140	FKM	131F4317-2995	491514	16	13	260	13

PN 20 bar

* Static pressure 14.5 bar



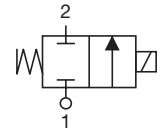
All dimensions are in mm

Dimensional Drawing N° 13

Solutions for Semi-Professional and Household coffee machines



2/2 Pipe mounting Direct acting - Normally closed



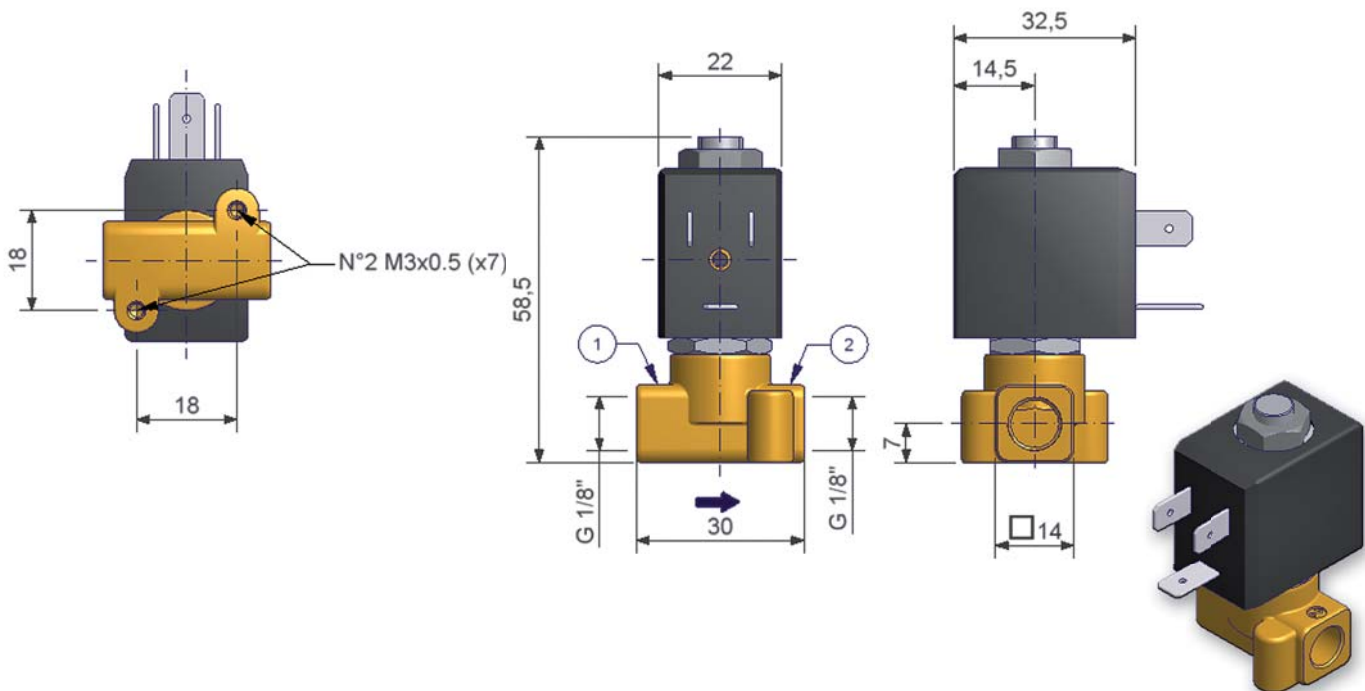
N74.4 Series

N74.4 Series is a small, compact flexible solution, with a robust stainless steel operator. Product solutions including 1/8" and 1/4" ports and different flow rates are available. A wide range of IP65 electrical parts and UL-recognized electrical parts might be used with this valve. Typical application: cold water, hot water and steam on/off control.

- Fluids:** Cold and hot water, steam within the media temperature limits.
Valve body: Moulded brass, CW617N UNI EN 12165.
Seals: FKM.
Sleeve and plungers: Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
					AC	DC								
1/8" G	1.2	0.04	0.7	0	20	12	140	FKM	N74.4IV	WB	5	4.5	140	14
	1.5	0.06	1	0	20	10	140	FKM	N74.4AV	WB	5	4.5	140	14
	2.0	0.11	1.8	0	15	7	140	FKM	N74.4BV	WB	5	4.5	140	14
	2.5	0.14	2.3	0	10	4	140	FKM	N74.4FV	WB	5	4.5	140	14
1/4" G	2.5	0.14	2.3	0	10	4	140	FKM	N74.4WV	WB	5	4.5	140	-

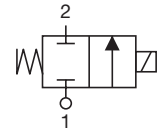
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 14

2/2 Sub-base mounting Direct acting - Normally closed



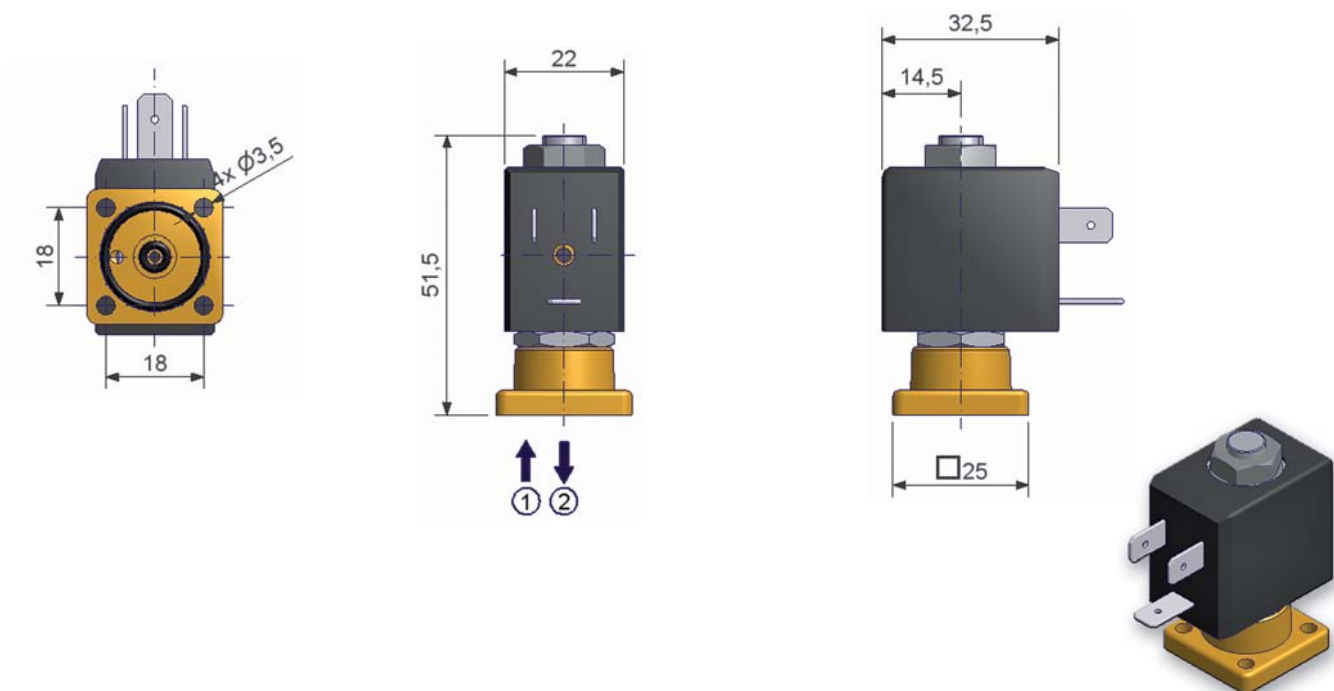
175 Series

175 Series is a small, compact and flexible solution, with a robust stainless steel operator.
A wide range of IP65 electrical parts and UL-recognized electrical parts might be used with this valve.
Typical application: cold water, hot water and steam on/off control.

- Fluids:** Cold and hot water, steam within the media temperature limits.
Valve body: Moulded brass, CW617N UNI EN 12165.
Seals: FKM.
Sleeve and plungers: Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
Sub-Base	2.0	0.09	1.5	0	15	7	140	FKM	175BV	WB	5	4.5	140	15

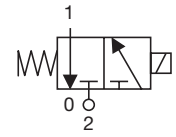
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 15

3/2 Pipe mounting Direct acting - Normally closed



N79.4-N79.6 Series

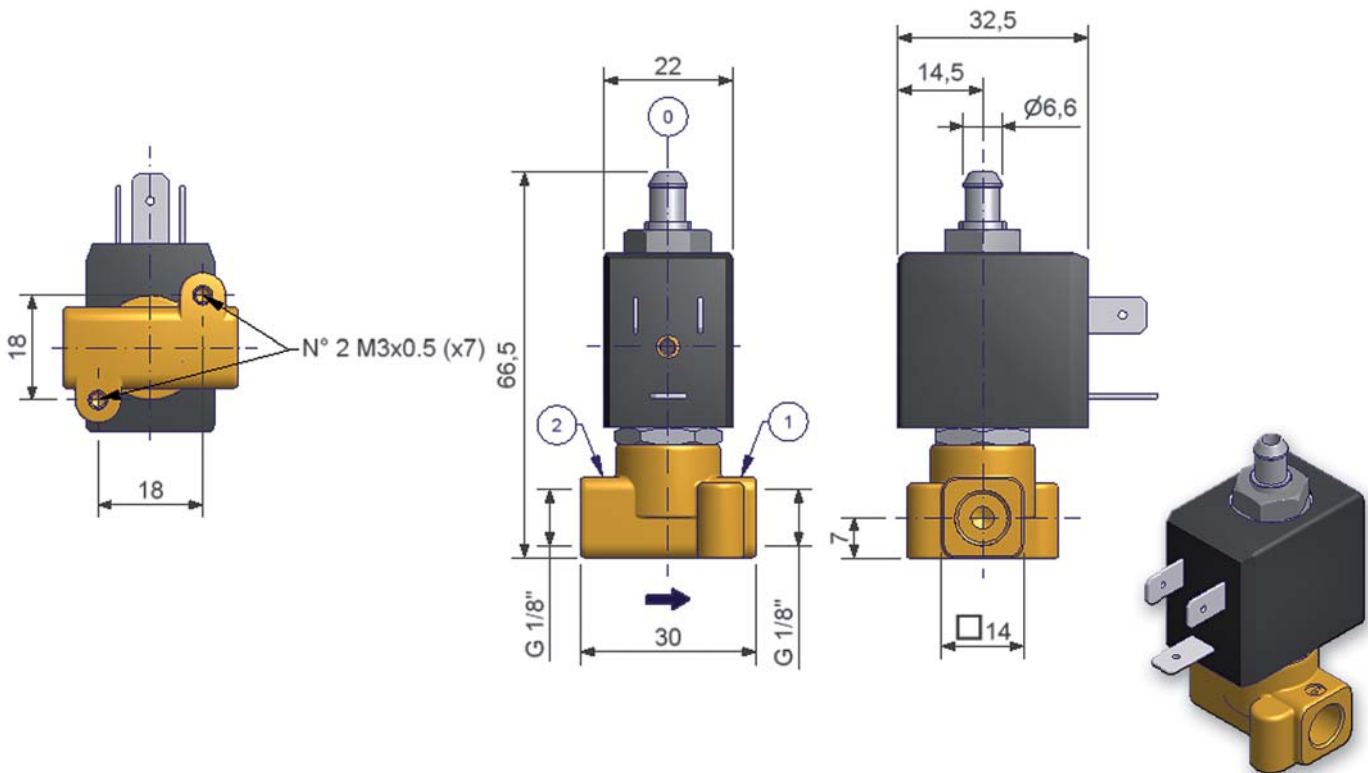
N79 Series is a small, compact and flexible solution, with a robust stainless steel operator. Port size from 1/8" to 1/4" ports and different flow rates are available. A wide range of IP65 electrical parts and UL-recognized electrical parts might be used with this valve.

Typical application: cold water, hot water and steam on/off control.

- Fluids:** Cold and hot water, steam within the media temperature limits.
- Valve body:** Moulded brass, CW617N UNI EN 12165.
- Seals:** FKM.
- Sleeve and plungers:** Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure	AC			DC	Pressure Vessel	Electrical Part	DC		
1/8" G	1.2	0.04	0.67	0	14	-	140	FKM	N79.6IV	WB	-	4.5	140	16
	1.5	0.06	1	0	8	-	140	FKM	N79.6AV	WB	-	4.5	140	16
	2.0	0.09	1.5	0	5	-	140	FKM	N79.6BV	WB	-	4.5	140	16
	2.5	0.13	2.3	0	3	-	140	FKM	N79.6FV	WB	-	4.5	140	16

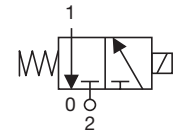
PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 16

3/2 Sub-base mounting Direct acting - Normally closed



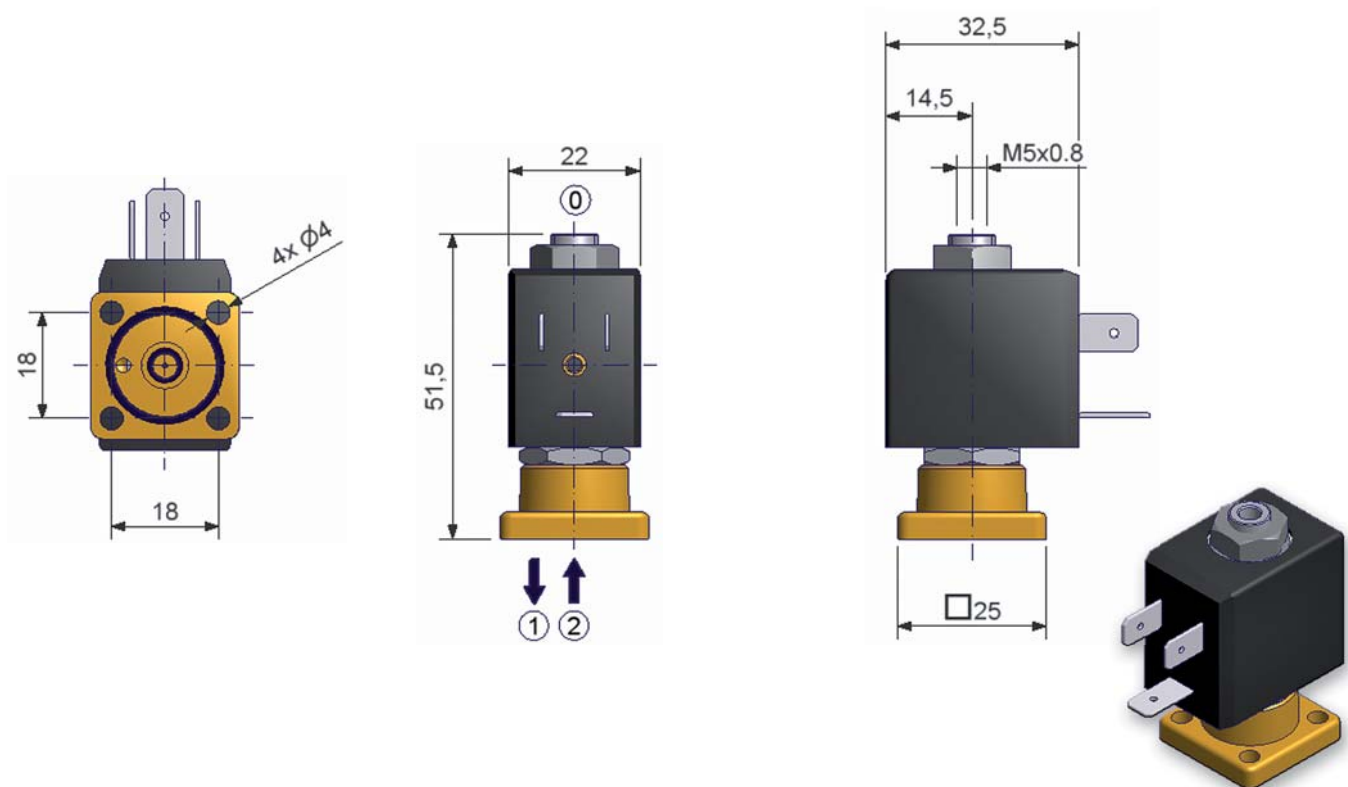
180QV Series

This family provides you a small, compact and flexible solution, with a robust stainless steel operator. A wide range of IP65 electrical parts and UL-recognized electrical parts might be used with this valve.

- Fluids:** Cold and hot water, steam within the media temperature limits.
- Valve body:** Moulded brass, CW617N UNI EN 12165.
- Seals:** FKM.
- Sleeve and plungers:** Stainless Steel.

Port Size G	Orifice mm	Flow Factors		Admissible Differential Pressure bar			Fluid Maxi. Temp. C°	Seat Disc	Reference Numbers		Power Consumption (W)		WT. (g)	Dimensional Ref
		m³/h	l/min	Minimum Pressure	Maximum Differential Pressure				Pressure Vessel	Electrical Part	DC	AC		
Sub-Base	1.0	0.027	0.45	0	20	-	140	FKM	180QV	WB	-	4.5	140	17

PN 20 bar



All dimensions are in mm

Dimensional Drawing N° 17

Electrical Parts

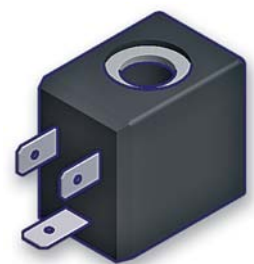
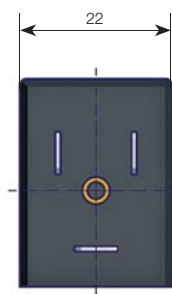
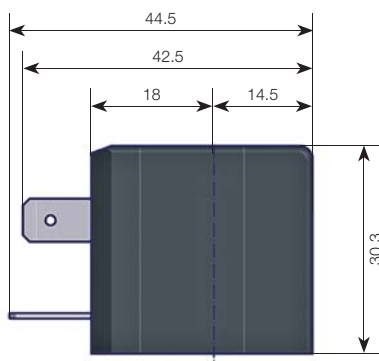
WB Series - Standard Coil Bi-Frequency and UL approved - F Class - IP65

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber, IP65 protection rate with DIN 43650B three pin connector.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 90 g with plug.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
110-120/50-60	4.5W	WB 4.5 110-120/50-60	IMQ	-10°C to +50°C	F Class 155°C	18
220-230/50-60	4.5W	WB 4.5 220-230/50-60	IMQ	-10°C to +50°C	F Class 155°C	18
24/50-60	4.5W	WB 4.5 24/50-60	-	-10°C to +50°C	F Class 155°C	18
240/50-60	4.5W	WB 4.5 240/50-60	-	-10°C to +50°C	F Class 155°C	18
120/60 UR	4.5W	WB 4.5 120/60 UR	UL	-10°C to +50°C	F Class 155°C	18
208-240/60 UR	4.5W	WB 4.5 208-240/60 UR	UL	-10°C to +50°C	F Class 155°C	18
24/60 UR	4.5W	WB 4.5 24/60 UR	UL	-10°C to +50°C	F Class 155°C	18
24DC	5.0W	WB 5.0 24DC	-	-10°C to +50°C	F Class 155°C	18



All dimensions are in mm

Dimensional Drawing N° 18

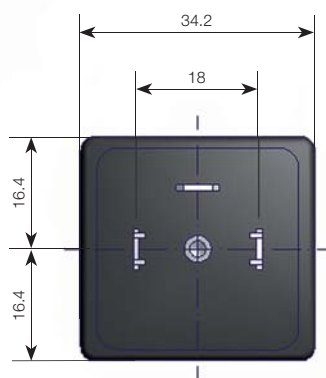
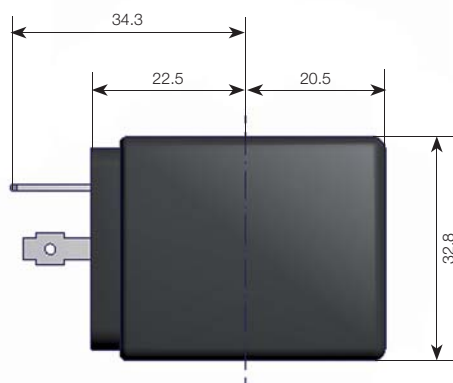
ZB Series - Standard Coil Bi-Frequency and UL approved - F Class - IP65

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber, IP65 protection rate with DIN 43650A three pin connector.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 130 g with plug.

Voltage	Power Consumption	Coil Description	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
110-120/50-60	9 W	ZB09 110-120/50-60	IMQ	-10°C to +50°C	F Class 155°C	19
220-230/50-60	9 W	ZB09 220-230/50-60	IMQ	-10°C to +50°C	F Class 155°C	19
24/50-60	9 W	ZB09 24/50-60	-	-10°C to +50°C	F Class 155°C	19
240/50-60	9 W	ZB09 240/50-60	IMQ	-10°C to +50°C	F Class 155°C	19
100/50-60	9 W	ZB09 100/50-60	IMQ	-10°C to +50°C	F Class 155°C	19
200/50-60	9 W	ZB09 200/50-60	-	-10°C to +50°C	F Class 155°C	19
115/60 UR	9 W	ZB09 115/60	UL/CSA	-10°C to +50°C	F Class 155°C	19
208-240/60 UR	9 W	ZB09 208-240/60 UR	UL/CSA	-10°C to +50°C	F Class 155°C	19
24/60 UR	9 W	ZB09 24/60 UR	UL/CSA	-10°C to +50°C	F Class 155°C	19
24DC	12W	ZB12 24DC	-	-10°C to +50°C	F Class 155°C	19



All dimensions are in mm

Dimensional Drawing N° 19

Electrical Parts

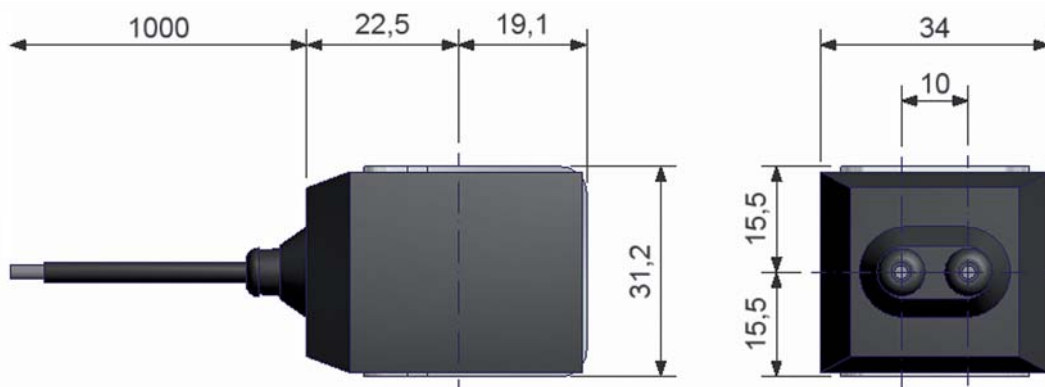
YB Series - Standard Coil Bi-Frequency and UL approved - F Class - IP67

Coil manufactured with H class copper wire, moulded in thermoplastic material polyester with 30% glass fiber, IP67 protection rate. Electrical connection: 2x1000 mm cables.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 150 g.

Voltage	Power Consumption	Coil Description	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
110-120/50-60	9 W	YB09 110-120/50-60	-	-10°C to +50°C	F Class 155°C	20
220-230/50-60	9 W	YB09 220-230/50-60	IMQ	-10°C to +50°C	F Class 155°C	20
24/50-60	9 W	YB09 24/50-60	-	-10°C to +50°C	F Class 155°C	20
240/50-60	9 W	YB09 240/50-60	-	-10°C to +50°C	F Class 155°C	20
120/60 UR	9 W	YB09 120/60 UR	UL	-10°C to +50°C	F Class 155°C	20
208-240/60 UR	9 W	YB09 208-240/60 UR	UL	-10°C to +50°C	F Class 155°C	20
24/60 UR	9 W	YB09 24/60 UR	UL	-10°C to +50°C	F Class 155°C	20
24DC	12W	YB12 24DC	-	-10°C to +50°C	F Class 155°C	20



All dimensions are in mm

Dimensional Drawing N° 20

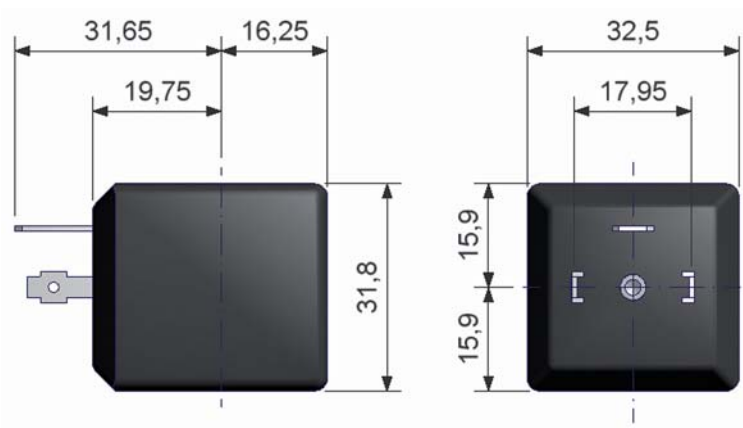
KT Series - Standard Coil Mono-Frequency F Class - IP65

Encapsulated in synthetic material. Connector for 2P+E DIN 43650 A Plug. IP65 insulation class to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: 10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 120 g with plug.

Voltage	Power Consumption	Coil Description	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
115/50	9 W	KT09 115/50	IMQ	-10°C to +50°C	F Class 155°C	21
115/60	9 W	KT09 115/60	-	-10°C to +50°C	F Class 155°C	21
220-230/50	9 W	KT09 220-230/50	IMQ	-10°C to +50°C	F Class 155°C	21
24/50	9 W	KT09 24/50	-	-10°C to +50°C	F Class 155°C	21
24/60	9 W	KT09 24/60	-	-10°C to +50°C	F Class 155°C	21
208-230/60	9 W	KT09 208-230/60	-	-10°C to +50°C	F Class 155°C	21
24DC	10W	KT10 24DC	-	-10°C to +50°C	F Class 155°C	21



All dimensions are in mm

Dimensional Drawing N° 21

Electrical Parts

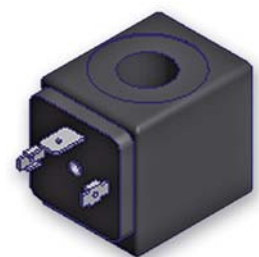
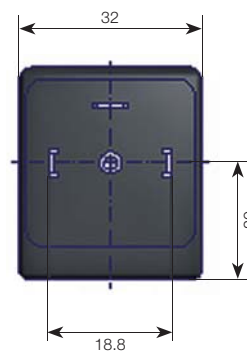
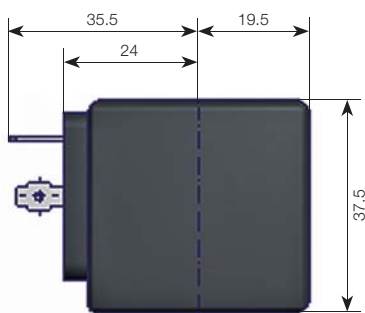
481865 Series - Standard Coil Mono-Frequency F Class - IP65

Encapsulated in synthetic material. Connector for 2P+E DIN 43650 A Plug. IP65 insulation class to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 130 g without plug.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
24/50	8 W	481865A2	VDE	-40°C to +50°C	F Class 155°C	22
110/50	8 W	481865A5	VDE	-40°C to +50°C	F Class 155°C	22
220-230/50	8 W	4818653D	VDE	-40°C to +50°C	F Class 155°C	22
24/60	8 W	481865B2	VDE	-40°C to +50°C	F Class 155°C	22
230/60	8 W	481865J3	VDE	-40°C to +50°C	F Class 155°C	22
115/60	8 W	481865K8	VDE	-40°C to +50°C	F Class 155°C	22
24 DC	9 W	481865C2	VDE	-40°C to +50°C	F Class 155°C	22



All dimensions are in mm

Dimensional Drawing N° 22

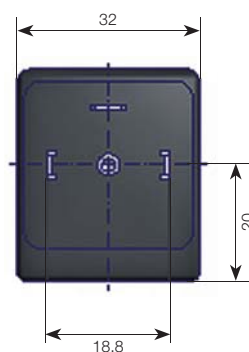
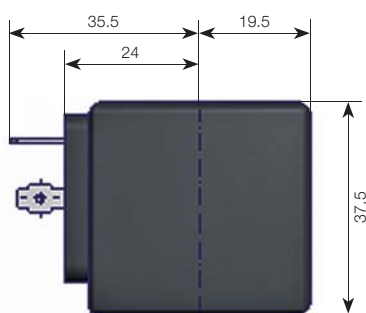
483510 Series - Standard Bi-Frequency Coil F Class - IP65

Encapsulated in synthetic material. Connector for 2P+E DIN 43650 A Plug. IP65 insulation class to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage tolerances: -10% to +10% of the nominal voltage (AC).
Duty: Continuous duty coil (100%ED).
Weight: 130 g without plug.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
12/50-60	9 W	4835101W	-	-40°C to +50°C	F Class 155°C	23
24/50-60	9 W	483510P0	VDE	-40°C to +50°C	F Class 155°C	23
48/50-60	9 W	483510S6	VDE	-40°C to +50°C	F Class 155°C	23
110-115/50 120/60	9 W	483510S5	VDE	-40°C to +50°C	F Class 155°C	23
220-240/50 240/60	9 W	483510S6	VDE	-40°C to +50°C	F Class 155°C	23



All dimensions are in mm

Dimensional Drawing N° 23

Electrical Parts

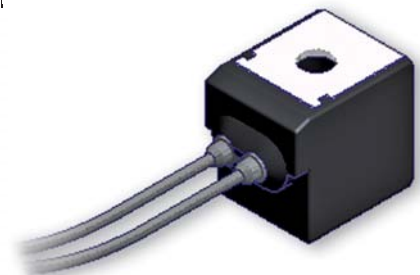
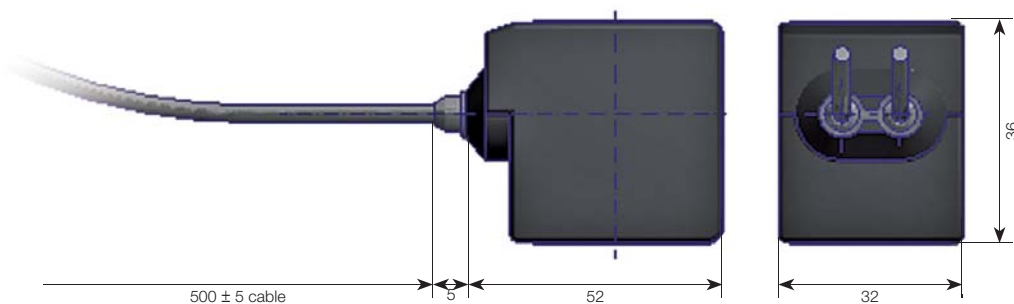
496081 Series - Coil with two 500 mm flying leads F Class - IP67

Encapsulated in synthetic material. Protection rate IP67 as per DIN 40050. Connection: 2 x 500mm cables. This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Earthing: as no wire for earth connection is supplied, please note that at least one part of valve, pipes, or system in which the valve is mounted must have earth connection.

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).
Duty: Continuous duty coil (100%ED).
Weight: 180 g.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
24/50 - 24/60	9 W	496081P0	-	-40°C to +50°C	F Class 155°C	24
110-115/50 120/60	9 W	496081S5	-	-40°C to +50°C	F Class 155°C	24
220-240/50 240/60	9 W	496081PS6	-	-40°C to +50°C	F Class 155°C	24
24 DC	9 W	496081C2	-	-40°C to +50°C	F Class 155°C	24



All dimensions are in mm

Dimensional Drawing N° 24

491514 Series 32 mm UL-Recognized Coil

This is an encapsulated assembly comprising a coil, integral magnetic-iron path and snap-on plug connection. The synthetic material encapsulated provides an effective compact housing, offering full protection against dust, oil, water, etc. Ease of mounting in confined space - offers shock and corrosion protection. IP65 insulation class to be considered with connector plug only.

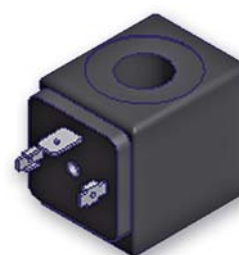
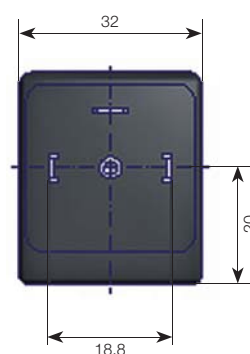
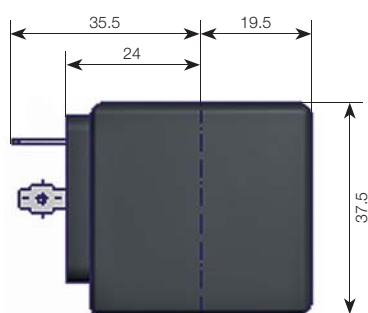
This coil is UL-approved as a recognized component for the insulation Class F, conforms to the IEC/ CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Specification: UL-recognized coil - UL file MH19410.

Duty: Continuous duty coil (100%ED).

Weight: 180 g.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
24/60	13 W	491514B2	UL	-40°C to +50°C	F Class 155°C	25
24DC	16 W	491514C2	UL/VDE	-40°C to +50°C	F Class 155°C	25
110/50 120/60	13 W	491514P3	UL	-40°C to +50°C	F Class 155°C	25
220/50 240/60	13 W	491514Q3	UL/VDE	-40°C to +50°C	F Class 155°C	25



All dimensions are in mm

Dimensional Drawing N° 25

Electrical Parts

496082 Series - UL-Recognized Coil with two 500 mm flying leads - F Class - IP67

Encapsulated in synthetic material. Protection rate IP67 as per DIN 40050. Connection: 2 x 500 mm cables. This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 2006/95/CE.

Earthing: as no wire for earth connection is supplied, please note that at least one part of valve, pipes, or system in which the valve is mounted must have earth connection.

This coil is UL-approved as a recognized component for the insulation Class F, conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 2006/95/CE.

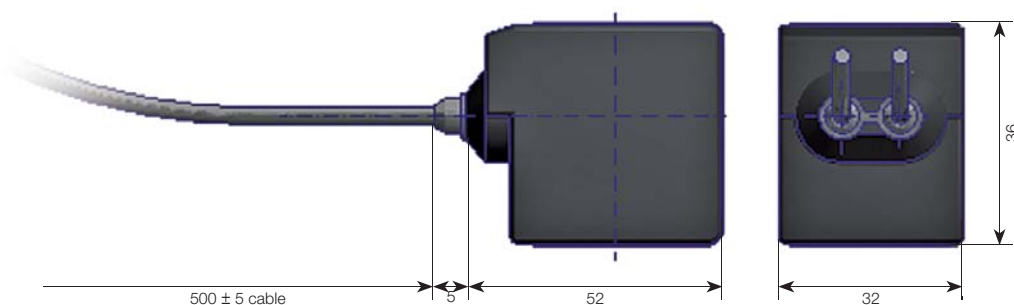
Specification: UL recognized coil - UL file MH19410 .

Voltage tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC).

Duty: Continuous duty coil (100%ED).

Weight: 180 g.

Voltage	Power Consumption	Reference	Approvals	Ambient Temperature	Class of Insulation	Dimensional Drawing
24/60	13 W	496082B2	UL	-40°C to +50°C	F Class 155°C	26
110/50 120/60	13 W	496082P3	UL	-40°C to +50°C	F Class 155°C	26
208-240/60	13 W	496082U3	UL	-40°C to +50°C	F Class 155°C	26
220/50 240/60	14 W	496082Q3	UL	-40°C to +50°C	F Class 155°C	26
24DC	16 W	496082C2	UL	-40°C to +50°C	F Class 155°C	26



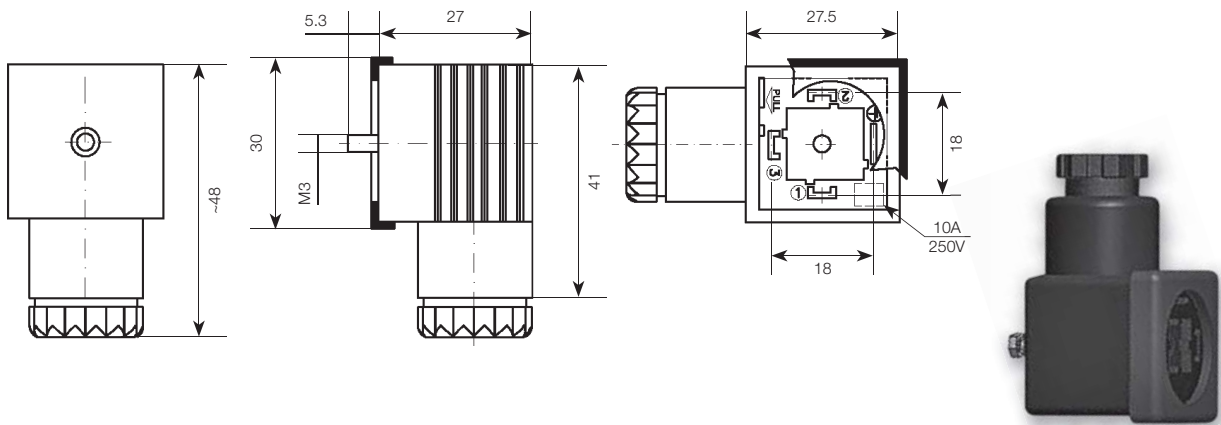
All dimensions are in mm

Dimensional Drawing N° 26

Connectors

2P+E DIN 43650A Plug

Max A	Cable Section	Nominal Voltage	Reference	Dimensional Drawing
16 A	6-10 mm ²	250-/300 V =	600003PLUG	27

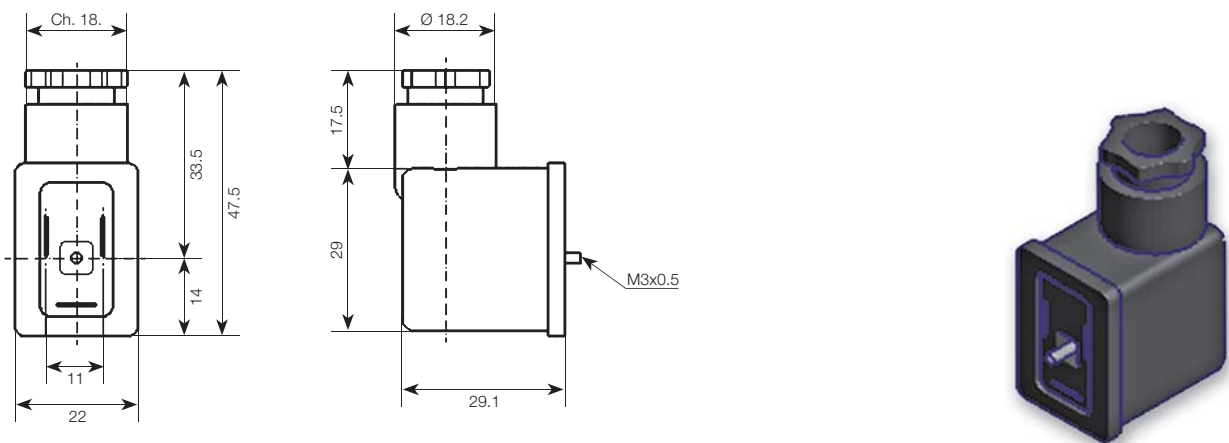


All dimensions are in mm

Dimensional Drawing N° 27

2P+E DIN 43650B Plug

Max A	Cable Section	Nominal Voltage	Reference	Dimensional Drawing
16 A	6-8 mm ²	250-/300 V=	600040	28



All dimensions are in mm

Dimensional Drawing N° 28

Pressure Switch PS325-1C Series

PS325-1C pressure switch has normally closed contacts and a fixed differential. This device operates as threepole switch for the direct command of three-phases circuits.

The pressure switch is equipped of 3 normally closed power contacts (B scheme), when the pressure exceeds the "off" value the contacts will open switching off the electric circuit.

The contacts will close if the pressure decrease under the "on" value $P-\Delta P$ (see A scheme). Parker PS325-1C Pressure Switch range is UL certified.

GENERAL FEATURES

- Plenum chamber body of forged brass.
- Sensible element at double diaphragm; reinforced elastomer with Teflon diaphragm (PTFE) in contacts with the fluid.
- Zinc-iridated metal parts.
- Self-extinguishing plastic materials V0-1.6.
- In-let G 1/4" with biconic connection.

Two fairland Ø 12 mm.

- Degree of protection IP20 (IP40 with optional cable gland).
- Adjustment sensitivity "off" pressure; 1 complete turn corresponding approximately at 5% of the pressure range.

ΔP Differential fixed.

Technical Features

- Storage temperature range: -15 to +80°C.
- Double breakage for pole with silver alloy contacts.

Electrical Features

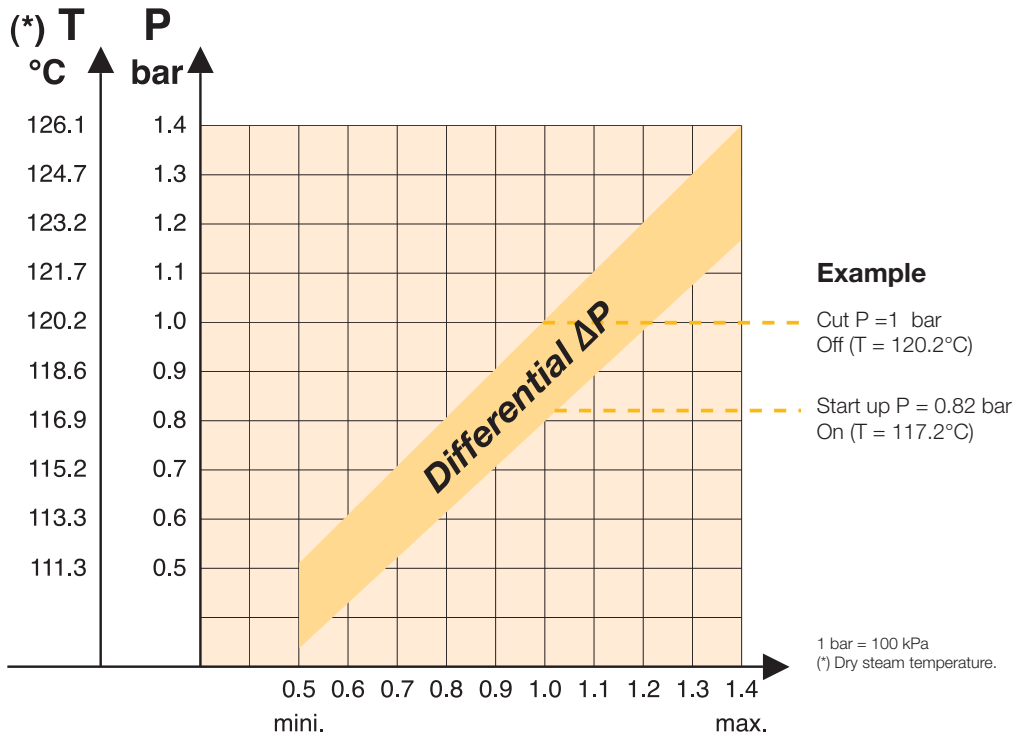
- Nominal voltage of isolation Ui 415 VAC
- Nominal current of continuous duty 25 A
- Nominal current in AC-1 duty 25 A
- Nominal current in AC-3 duty 9 A

Conformity with CEI EN 60947-1, **CEI EN 60947-4-1**

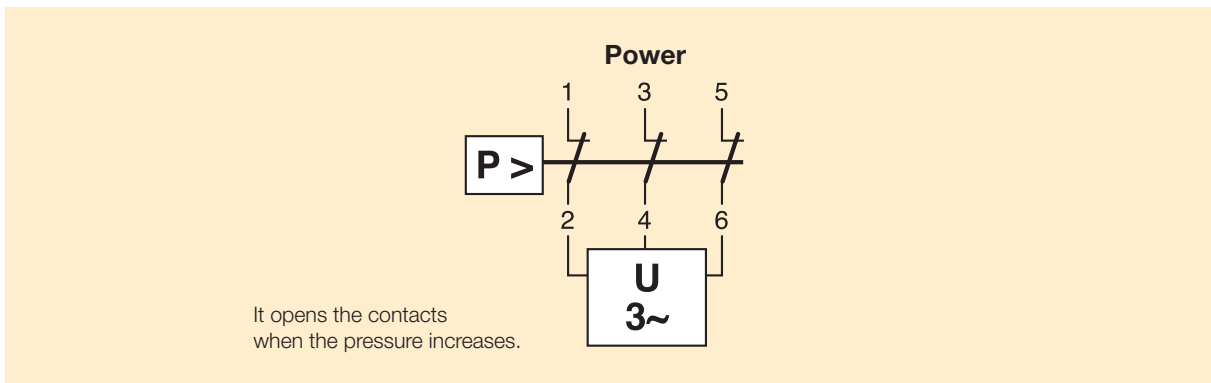
Dimensions:

Please refer to Dimensional drawing N° 29

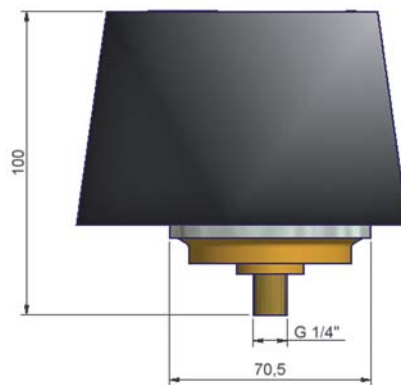
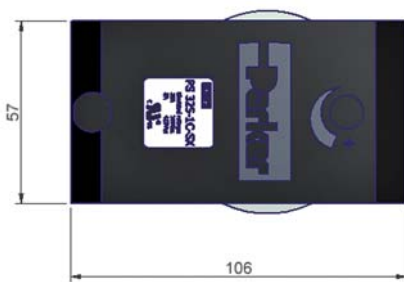
Model	Range bar	Fixed Differential	Max. pressure bar	Max. Temperature fluid °C	Max. Temperature body °C
PS325-1C SX	0.5 + 1.4	0.18 +/- 0.03	2.1	140	80



A scheme



B scheme



All dimensions are in mm

Dimensional Drawing N° 29

Parker Connectors for Beverage Dispensers



A broad range of high quality fittings, tubing and accessories for your fluid circuits

A philosophy that benefits nature, technology, and mankind by protecting our natural resources and optimizing energy use thanks to the performance of our industrial tool.

Permanent and continuous improvement, by changing old habits and promoting new materials and concepts.

- Achieving environmental regulations as: ISO 14001, RoHS, Reach...
- Developing eco-design on every new product
- Informing OEMs and final customers thanks to environmental footprint data sheets.



Energy Depletion:
Gain in terms of energy savings during a product's life cycle



Global Warming:
Gains in terms of CO₂ rejection during a product's life cycle



Ozone Depletion: Gain in terms of gas rejection affecting the ozone layer during a product's life cycle

LF 3000® stud elbow



Standard product on the market LF 3000

Instant Fittings

LIQUIfit™

Leak-free instant fittings in a 100% bio-based compact body. LIQUIfit™ offers optimum performance suitable for contact with water, beverages and food, as well as being the most compact profile on the market. The many advantages of this range include EPDM patented sealing technology, full flow, no pumping effect and minimized internal retention.

Technical Specifications

Working Pressure:

from -0.9 to 16 bar
(depending on the product type)

Working Temperature:

-10°C to +95°C
(depending on the product type)

Material Specifications

Body and threads: bio-based material

Gripping ring: stainless steel

Thread sealant: PTFE

'D' ring: EPDM



Ø4 - Ø12 mm
Ø5/32 - Ø1/2 inch



NSF 61
- C HOT -

Secure your Connections

Tamper-Evident Safety Clip

A solution that makes tampering obvious and warns that the application is sensitive and that disconnection could endanger persons and goods.

- Limits disconnection operations to workers with a toolbox
- Reinforces the warning
- Gives evidence of tampering
- Enables colour coding



Assemble the clip/Connect the tube



Cut the clip with pliers/Remove the clip/Release the tube

PVDF

The PVDF instant fittings range offers the perfect trade-off between chemical and pressure resistance at high temperatures. Available upon request, this range (from Ø4 to Ø8 mm) can be delivered with brass or stainless steel sub-bases, as well as FKM or EPDM seals.

Technical Specifications

Working Pressure: up to 15 bar (depending on temperature and product type)

Working Temperature: up to 150°C for straight fitting up to 130°C for other fittings



Material Specifications

Body: PVDF

Sub-base:

- High phosphorus chemical nickel-plated brass
- Lead-free brass (<0.2%)
- Stainless steel 316L

Gripping ring: stainless steel
'D' ring: FKM or EPDM



New Range upon Request

LF 3600 Nickel-Plated Brass

The LF 3600 fittings range, a range of extremely robust fittings. Resisting temperatures of up to 150°C, and functioning at 99% vacuum at as high as 30 bar, the LF 3600 is the one and only brass instant fitting on the market capable of such a performance.

Technical Specifications

Working Pressure: from 0.9 to 30 bar (limited to 20 bar for compact swivel elbows 3699, 3609)

Working Temperature: -20°C to +150°C



Material Specifications

Body/Collet/Washer/Sub-base: high phosphorus chemical nickel-plated brass

'O' ring: FKM fluoroelastomer
NSF H1 grease



LF 3900/LF 3800

LF 3900: a range of instant fittings in full 316L stainless steel, with FKM seals, for optimum resistance to aggressive environments.

LF 3800: a range of instant fittings in 316L stainless steel with 303 (collet) and FKM seals, for elemental chemical resistance and competitive price positioning.

Technical Specifications

Working Pressure: from 0.9 to 30 bar (maxi 20 bar for 3979/3879 and 3989/3889)

Working Temperature: -20°C to +150°C



Material Specifications

Body/Collet/Washer: stainless steel 316L (LF 3900)
stainless steel 303 (LF 3800)

Sub-base: stainless steel 316L
'O' ring: FKM



Cartridges

The cartridge system allows you to save time during assembly, requires less machining, eliminates risk of faulty assembly and allows for the possibility of having different tube diameters for only one cavity diameter. There's no risk of losing the seal with this one-piece fitting.

Technical Specifications

Working Pressure:

from -0.9 to 20 bar

Working Temperature:

-20°C to +80°C

Material Specifications

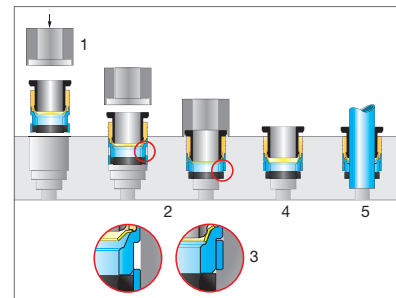
Retaining sleeve: brass

Gripping ring: stainless steel

Seal: EPDM



1935/2004/EC DI 2002/95/EC



1. Assembly tool.
2. Self-centring up to half of the height of the cartridge
3. Depression of seal protection leaves seal locked into cavity
4. Cartridge in place
5. Tube connected

Universal Compression Fittings

Universal compression fittings are designed to solve all fluid distribution problems and provide a complete system of fittings suited to all types of tubing (copper and stainless steel) and valve assemblies thanks to the flexibility offered by the vast range of accessories: olives, sleeve nuts, reducers, tube adaptors.

Technical Specifications

Working Pressure: up to 150 bar (depending on the product type)

Working Temperature: up to 150°C (depending on the product type)

Material Specifications

Body/Olive*: brass or stainless steel

*Available in lead-free brass (<0.2%) upon request



DI 2002/95/EC



PL Nickel-Plated Brass Fitting for Plastic Tubing

The PL fitting's unique sealing method make it ideally suited for use with a wide variety of media.

It is particularly suitable for use in fluid handling applications where media or temperature considerations limit the method of sealing.

PL is a two-piece nickel-plated brass fitting specifically designed for flexible tubing such as polyamide, polyurethane, PEBA, polyethylene, PTFE, PVC... The seal is obtained by the bead formed at the tube end when the nut is tightened to the fitting body. The connection is leakproof to the burst pressure of the tube. PL fittings can be assembled and disassembled repeatedly.

Technical Specifications

Working Pressure:

from 0.01 to 40 bar

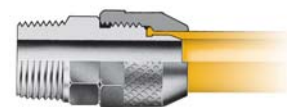
Working Temperature:

-40°C to +100°C

Material Specifications

Body/Nut*: Nickel-plated brass

*Available in lead-free brass (<0.2%) upon request



Tubing

Advanced PE

Made from high-grade polyethylene, "Advanced PE" tubing ensures the best balance between flexibility and pressure/temperature resistance. Resistant to a wide range of aggressive chemical agents. Complies with international regulations and certifications for food and drinking water and standard W270 regarding micro-organism growth on materials. Available in nine colours and eight diameters.



Technical Specifications

Working Pressure:

from -0.9 to 16 bar (depending on temperature and product type)

Working Temperature:

-15°C to +95°C



FEP

Parker Legris fluoropolymer tube (FEP) is food quality and provides excellent resistance to aggressive and corrosive agents and to high temperatures. It has a surface hardness of 55° shore D.



Technical Specifications

Working Pressure:

from -0.9 to 22 bar (depending on temperature and product type)

Working Temperature:

-40°C to +150°C



PFA

A Comprehensive Range of PFA Tubing for Perfect Adaptability

High purity grade PFA for our clear tubing to cover all applications. Standard grade PFA for our coloured tubing for circuit identification and special requests.

Extreme Versatility for All Technical Applications

A flexible alternative to stainless steel tubing. Broad range of working temperatures. Non-stick properties, chemically inert and lowest permeability for the conveyance of numerous fluids and gases. Outstanding resistance to ageing. Non-flammable and UV-transparent. Repeated flexing possible with unremoved resistance to stress cracking.



Technical Specifications

Working Pressure:

from -0.9 to 35 bar (depending on temperature and product type)

Working Temperature:

-196°C to +260°C



Fluid System Connectors Europe
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How to Order

A complete solenoid valve is composed by 3 elements: the **pressure vessel**, the **housing** and the **coil**. All the parts listed in this catalogue are supplied with the standard housing integrated, therefore your selection process is easier: you have to choose the pressure vessel and the electrical parts in the main tables from page 18 to page 35.

Electrical parts technical details and available voltages are described from page 38 to page 42.

You can order pressure vessel and electrical part together, or separately.

Step 1

Select the pressure vessel reference needed at pages 18-35.

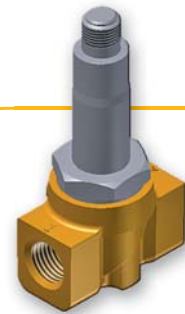
Fluid Temp. (C°)	Main Seat Disc	Reference Numbers		Power Consumption (W)
		Part Number	Electrical Part	
140	Ruby	3019F1GRG7	D5	9
			XS03	-
			D4	16
			LA	9
			LB-LC	10



Step 2

Select coil at pages 36-44.

Power Consumption	Reference	Approvals
8 W	D5H	VDE
8 W	D5XA5	VDE
8 W	D5L	VDE
8 W	D5E	VDE
8 W	D5XJ3	VDE
8 W	D5XK8	VDE



Step 3

Select accessories at page 45.



Ordering a product or a configuration not listed in the catalogue.

When an application demands a combination of features not listed in the catalogue, please feel free to contact the closest Parker office. Parker personnel will assist in determining the applicability availability and price of the new product.



WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



AEROSPACE

Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



CLIMATE CONTROL

Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products

- CO² controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



ELECTROMECHANICAL

Key Markets

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



FILTRATION

Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



FLUID & GAS HANDLING

Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



HYDRAULICS

Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products

- Diagnostic equipment
- Hydraulic cylinders
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



PNEUMATICS

Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



PROCESS CONTROL

Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



SEALING & SHIELDING

Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management



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