





EXCELLENT SOLUTIONS IN FLUIDTECHNOLOGY

For over 40 years, Aignep is leading manufacturer of compressed air and industrial fluid fittings. Our company is driven by a constantly innovative spirit which has brought us to great results in various sectors of industrial automation. Our products are widely known for their high quality and Italian design: pneumatic cylinders and solenoid valves, fluid process control valves "FLUIDITY", compressed air NOZZLEline "INFINITY", fittings and quick couplings for every fluid media.

All the products are engineered by a dedicated professional team and manufactured in Italy in the production site of Bione, 25.000 m2. More than 14.000 standard items in the catalogue and numerous special versions on demand.

Every year Aignep invests in automation, innovation and services to satisfy the requests of a worldwide customer base. Precisely to be closer to our customers our company has 9 Regional branches: USA, Spain, France, Switzerland, Brasil, Colombia, China, Russian and Germany, becoming a multinational Group.

"Move the Fluid Power!"

"Listening to our customers, understanding their needs is the power that drives us to develop everyday new solutions for fluid and compressed air".



GRAIANO BUGATTI
Managing Director

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AIGNEP SPA - Headquarters

Via Don G. Bazzoli - 34
25070 Bione (BS)
ITALY

T: +39 0365 896626
F: +39 0365 896561

aignep.it@aignep.com

Fluidity division:

Via Archimede - 31
20864 Agrate Brianza (MB)
ITALY

AIGNEP USA LLC

7121 Loblolly Pine Blvd
Fairview, TN 37062
U.S.A.

T: +1 615 771 6650
F: +1 615 771 0926

aignep.usa@aignep.com

AIGNEP IBERICA SA

Pol. Ind. el Tortuguer "Can Prat"
Naves 23 y 24 08691
Monistrol de Montserrat - Barcelona
SPAIN

T: +34 93 828 47 36
F: +34 93 828 44 32

aignep.es@aignep.com

AIGNEP FRANCE SARL

Rue du Tertre, 1A - 44470
Carquefou
FRANCE

T: +33 27 22 42 650
F: +33 27 22 42 651

aignep.fr@aignep.com

AIGNEP (Wuxi) FLUID TECHNOLOGY CO., LT D.

NO. 8, Yanggong Road, Nanhu
Main Road, Wuxi Jiangsu.
CHINA

T: +86 0510 8544 1923
F: +86 0510 8540 0223

aignep.cn@aignep.com

AIGNEP RUS LLC.

Ryazansky prosp. h. 22, build.
2, office 723, 109428 - Moscow
RUSSIAN

T: +7 49 5143 6286

aignep.ru@aignep.com

Distribution network in:

ALBANIA ALGERIA ARGENTINE AUSTRALIA AUSTRIA AZERBAIGIAN BELARUS BELGIUM BOLIVIA BOSNIA
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in the world

AIGNEP AG

Industriestrasse 22A
CH-2545 Selzach
SWITZERLAND

T: +41 32 342 09 09
F: +41 32 342 09 11
aignep.ch@aignep.com

AIGNEP DO BRASIL COMERCIO DE COMPONENTES PARA AUTOMAÇÃO LTDA

Rua Batista Pereira, 99 - Macuco
Vila Mathias - 11015-011 - Santos/SP
BRASIL

T: +55 13 2138 4049
F: +55 13 2138 4052
aignep.br@aignep.com

AIGNEP LATAM SAS

Sede:

Calle 15, N 27-78, Local 7
Sec. Paloquemao - 111411
Bogotá
COLOMBIA

T: +57 601 375 2501/8
T: +57 601 744 2086
T: +57 601 745 2736

Sucursal:

Carrera 50 FF, N 8 Sur - 27
Ofi 404 Edificio 8908 - 050023
Medellin
COLOMBIA

T: +57 46 04 25 34
T: +57 46 04 21 87

aignep.latam@aignep.com
www.aignep.com.co

AIGNEP DEUTSCHLAND GMBH

Sitz der Gesellschaft: 48739 Legden
Industriepark 2
GERMANY

T: +49 2566 7039 290
F: +49 2566 7039 299
aignep.de@aignep.com

LUXEMBOURG MALAYSIA MAROCCO MEXICO MOLDOVA NEW ZELAND NICARAGUA NIGERIA NORTH MACEDONIA
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...more information at: sales@aignep.it

0. Introduction

HOW TO READ THE NEW FLUIDITY CATALOG

Pag 0.1- 0.3

INTRODUCTION AND FUNCTION - SOLENOID VALVE TYPES

Pag 0.4 - 0.6

GENERAL TECHNICAL INFORMATION

Pag 0.7

FLOW COEFFICIENTS Kv and Cv - VISCOSITY

Pag 0.7

FLOW CALCULATION - IP PROTECTION CLASS

Pag 0.8 - 0.9

COILS TECHNICAL INFORMATION

Pag 0.10

CONVERSION TABLES TEMPERATURE - PRESSURE - STEAM VALUES

Pag 0.10 - 0.11

RESPONSE TIMES

Pag 0.12

CHEMICAL COMPATIBILITY TABLE - SEALING MATERIALS FEATURES - INSTALLATION AND MAINTENANCE

Pag 0.13 - 0.14

1. Series 01F

2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY



2. Series X1F

2/2 NC-NO - 3/2 NC-NO

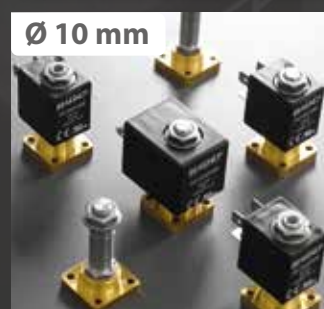
DIRECT ACTING SOLENOID VALVES WITH STAINLESS STEEL 316L BODY



3. Series F1F

2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY



4. Series 02F

2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

Ø 13 mm



5. Series X2F

2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH STAINLESS STEEL 316L BODY

Ø 13 mm



6. Series F2F

2/2 NC-NO - 3/2 NC-NO

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

Ø 13 mm



7. Series 03F

2/2 NC $\Delta P = 0$ psi

GUIDED DIAPHRAGM SOLENOID VALVES WITH BRASS BODY

Ø 13 mm



8. Series 04F

2/2 NC-NO

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

Ø 10 mm



9. Series X4F

2/2 NC-NO

SERVO-ASSISTED SOLENOID VALVES WITH STAINLESS STEEL 316L BODY

Ø 10 mm



10. Series 90976

2/2 NC

DRAIN VALVE



11. Coils & Connectors

COILS AND CONNECTORS



12. Solenoid Pilots

SOLENOID PILOTS



13. Accessories

FLUIDITY SPARE PARTS AND ACCESSORIES



FLUIDITY

Solenoid valves for fluids

www.aignep.com

Fluidity SERIES

Aignep, Italian company leader in the production of components for fluid controls, designs and manufactures the range of FLUIDITY solenoid valves for the use with liquid and gaseous fluids.

With a simple and compact design, the FLUIDITY solenoid valves are available in 2/2 and 3/2 versions, direct acting and servo-assisted, NC and NO, sizes from 1/8" up to 2" and the whole range is ATEX II 2G/D Ex h certified.

The bodies are available in different types of brass and Stainless Steel, with a wide selection of gaskets depending on the compatibility with the fluid.

The materials used allow the FLUIDITY solenoid valves to be installed also in food applications or in contact with aggressive fluids and reach working temperatures from -40°C to +180°C.

The proposed coils allow to obtain high performances and, on request, low power consumption.

Multiple are the combinations with our fittings depending on the application and the fluid to be managed.

In addition to the standard products in the catalog, we are able to realize customized solutions to satisfy the most demanding requests of our Customers.

Main advantages

- Simple, compact and strong design
- ATEX II 2G / D Ex h certified valves
- High pressures and high flow rates
- High quality gaskets: perfect sealing with high number of working cycles
- Class H coils
- Coils certified  -  - CSA C22.2 - 
- Products traceability
- Stock availability for quick delivery
- 100% Made in Italy

Applications

- Food industry
- Coffee & vending
- Irrigation
- Industrial Processes and Automation
- Machine tools, Laser cutting
- Automotive
- Compressors
- Industrial washing, pressure washers
- Car wash
- Misting
- Heating and Refrigeration
- Medical
- Sterilizers
- Vacuum
- Chemical and Petrochemical industry
- Fire-fighting systems



SOLENOID VALVES FOR FLUIDS



Series Fluidity

HOW TO READ THE FLUIDITY CATALOG

Introduction to the catalog

The Fluidity catalog includes all the families of solenoid valves for fluid controls available in the Aignep's product range.

In the catalog the User can find technical content, information, tables and formulas in the introduction pages, whereas for each individual Series, a product presentation it's proposed including technical features, certifications, available options and improved performances.

In order to offer an increasingly excellent service and support to its Customers, Aignep reserves the right to make changes to the catalog to improve products and contents, and recommends to contact the technical support for any necessary clarification.

°F			°C			K		
-40	-40	233.15	104	40	313.15	284	140	413.15
-31	-35	238.15	113	45	318.15	302	150	423.15
-22	-30	243.15	122	50	323.15	320	160	433.15
-13	-25	248.15	131	55	328.15	338	170	443.15
-4.0	-20	253.15	140	60	333.15	356	180	453.15
5.0	-15	258.15	149	65	338.15	374	190	463.15
14	-10	263.15	158	70	343.15	392	200	473.15
23	-5	268.15	167	75	348.15	428	220	493.15
32	0	273.15	176	80	353.15	464	240	513.15
41	5	278.15	185	85	358.15	500	260	533.15
50	10	283.15	194	90	363.15	536	280	553.15
59	15	288.15	203	95	368.15	572	300	573.15
68	20	293.15	212	100	373.15	608	320	593.15
77	25	298.15	220	110	383.15	644	340	613.15
86	30	303.15	229	120	393.15	680	360	633.15
95	35	308.15	238	130	403.15	716	380	653.15

FLUIDS					
	Brass	Stainless Steel AISI 316L	NBR	EPDM	FKM
Acetone	●	●	●	●	●
Acetylene	●	●	●	●	●
Argon	●	●	●	●	●
Benzene	●	●	●	●	●
Butane	●	●	●	●	●
Carbon dioxide dry (gas)	●	●	●	●	●
Carbon dioxide dry (liquid)	●	●	●	●	●
Carbon disulfide	●	●	●	●	●
Chloroform (100%)	●	●	●	●	●
Diesel fuel	●	●	●	●	●
Helium	●	●	●	●	●
Ethane	●	●	●	●	●
Ethanol	●	●	●	●	●
Ethyl acetate	●	●	●	●	●
Ethyl chloride	●	●	●	●	●

Sealing materials	Temperature		Fluids
	min	max	
NBR	+14°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
NBR ❄️	-40°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
FKM	+14°F	+284°F	Mineral oils, gasoline, diesel, fuel oils
EPDM	+14°F	+284°F	Hot water, steam (max pressure 36 psi)
PTFE	-40°F	+356°F	Steam (max pressure 145 psi), solvents, aggressive fluids
RUBY	-40°F	+356°F	Water, hot water, demineralized water, steam (max pressure 145 psi), aggressive fluids

Product presentation

In the introduction pages for each valve Series, a brief presentation of the product is proposed which introduces the type of valve and shows the main data to simplify the choice; the pages offer the following information:

- 1 Product family, valve function and available port sizes.
- 2 Materials and components, general features and helpful information.
- 3 How to compose the valve model and explanation of each individual code.
- 4 Usable coils and connectors, with reference to the technical data sheets pages.

Valve section

Following the product presentation, there are the pages related to the types of valves expected for the Series in question; on these pages is possible to find the following information:

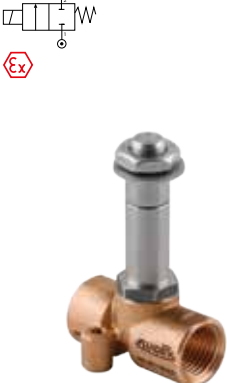
- 5 Valve codes table showing technical features and performances, divided according to the type of coil.
- 6 Complete the valve code indicated in the first column with the letter relating to the available sealing material indicated in the second column.
- 7 Valve sectional and dimensional drawing.

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seal: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel

General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2

Maximum allowable pressure

580 psi (40 bar)

Compatibility and materials table

Page 0.13 - 0.14

Room temperature with coil class H

+14°F +176°F
-10°C +80°C

Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry

Ordering codes

Series	Port size	Functions	Office (inch/mm)	Sealing materials	Version	Thread	Suitable coils
01F	02 = 1/8" 03 = 1/4"	1 = 2/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	A = A series - SOL 10 B = B series - SOL 11 1 = 24V AC 2 = 110V AC 3 = 230V AC

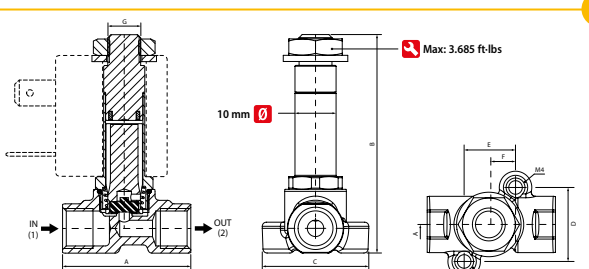
Valves and coils are supplied separately. Upon commercial agreement, can be supplied assembled.

Series 01F - 2/2 NC

Code	Sealing materials	Port size	Ø Office	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			W	VA	Size	Series
						Min	Max DC	Max AC			mm	
01F 02 1 15 _ 0 N	N	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL 10
01F 02 1 02 _ 0 N	N	1/8"	5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL 10
01F 02 1 25 _ 0 N	N	1/8"	3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL 10
01F 02 1 03 _ 0 N	N	1/8"	1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL 10
01F 02 1 04 _ 0 N	N	1/8"	5/32 (4)	53	0.35 (0.30)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL 10
01F 03 1 15 _ 0 N	V	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL 10
01F 03 1 02 _ 0 N	V	1/4"	5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL 10
01F 03 1 25 _ 0 N	V	1/4"	3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL 10
01F 03 1 03 _ 0 N	V	1/4"	1/8 (3)	53	0.23 (0.20)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL 10
01F 03 1 04 _ 0 N	V	1/4"	5/32 (4)	53	0.35 (0.30)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL 10

① Select seal material
With steam: EPDM - P max = 36 psi (2.5 bar)
Coil not included

Valve sectional and dimensional drawing



Size	A (inch/mm)	B (inch/mm)	C (inch/mm)	D (inch/mm)	E (inch/mm)	F (inch/mm)	G (inch/mm)
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.402 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Coil section

Each valve requires the use of certain types of coils, as indicated for each Series. The pages related to each coil Series contain the following information:

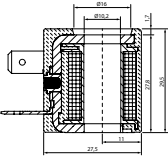
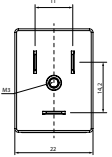
- 11 Product family, coil sectional and dimensional drawing.
- 12 Coil codes table with the main technical features: available voltages supply, standard powers, tolerances and ambient temperature.
- 13 General technical information and options on request.
- 14 Coil size, operator diameter and ED service.
- 15 Standard certifications.
- 16 Reference with 2 digits and related coil code.

AIGNEP

Serie A

SERIES A

COIL 11

22 mm

10 mm

ED 100%

11

The dimensions are in millimeters (mm)

CE

C UL US

UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
AA	SOL10012C4000	12V DC	6.5 W	±10 %		
AB	SOL10024C4000	24V DC	6.5 W	±10 %		
A1	SOL10024A8000	24V AC / 50-60 Hz	7.5 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
A2	SOL10110A8000	110V AC / 50-60 Hz	7.5 VA	±10 %		
A3	SOL10220A8000	220V AC / 50-60 Hz	7.5 VA	±10 %		

INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	RYNITE®	ELECTRICAL CONNECTIONS	FORM B EN 175301-803 (EX DIN 43650)
AMBIENT TEMPERATURE	+14°F +176°F (-10°C +80°C)	PROTECTION DEGREE	IP67 IEC 60529 with connector IP67	OPTIONS	Other voltages/powers on request

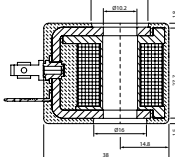
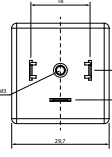
11.6

AIGNEP

Serie B

SERIES B

COIL 14

30 mm

10 mm

ED 100%

14

The dimensions are in millimeters (mm)

CE

C UL US

UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
BA	SOL11012C5000	12V DC	8 W	±10 %		
BB	SOL11024C5000	24V DC	8 W	±10 %		
B1	SOL11024A9000	24V AC / 50-60 Hz	11 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
B2	SOL11110A9000	110V AC / 50-60 Hz	11 VA	±10 %		
B3	SOL11220A9000	220V AC / 50-60 Hz	11 VA	±10 %		

INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	RYNITE®	ELECTRICAL CONNECTIONS	FORM A EN 175301-803 (EX DIN 43650)
AMBIENT TEMPERATURE	+14°F +176°F (-10°C +80°C)	PROTECTION DEGREE	IP67 IEC 60529 with connector IP67	OPTIONS	Other voltages/powers on request

11.7



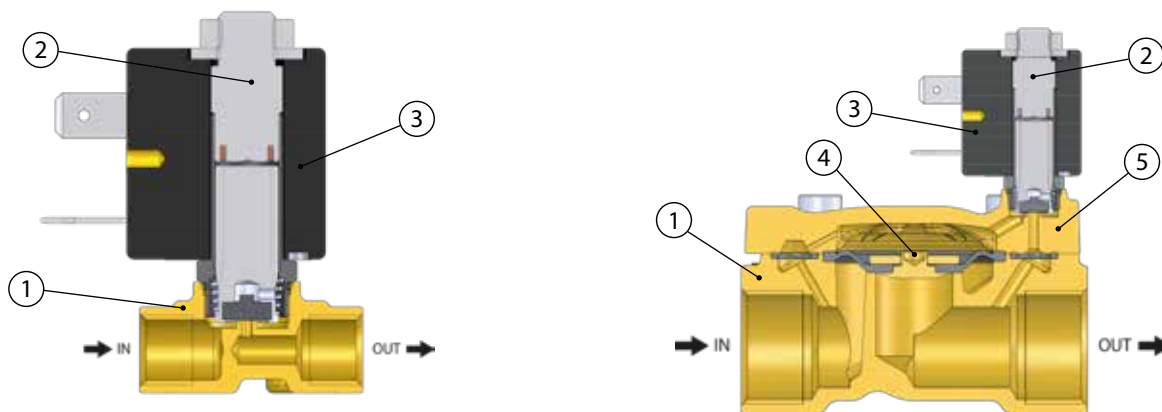
Introduction and function

Solenoid valves are electromechanical devices which allow a fluid, either gaseous or liquid, to flow through an orifice inside the valve body. The opening or closing of the main orifice, whether controlled directly or indirectly, takes place via the mobile plunger which is activated by the magnetic field generated by the coil.

Technical elements and terminology

The solenoid valves are composed by:

- 1 Valve body, in which there is the main orifice and the inlet/outlet connections to the line.
- 2 Operator kit, composed by an armature tube (which houses the fixed core) and mobile core (which houses the shutter). Generating the magnetic field, the mobile plunger slides inside the armature tube allowing the opening or closing of the main orifice or the pilot orifice or the exhaust (in the case of a 3-way valves).
- 3 Coil or solenoid, which generates the magnetic field needed to activate the mobile plunger.
- 4 Diaphragm or piston (for servo-assisted valves only), which allows the opening or closing of the main orifice.
- 5 Cover (for servo-assisted valves only), which has the function of housing the operator kit and being installed on the body to allow the fluid to flow inside the valve.



Solenoid valve types

DIRECT ACTING SOLENOID VALVES

2/2 NC - NO

3/2 NC - NO - U



1

SERVO-ASSISTED SOLENOID VALVES

2/2 NC - NO



2

GUIDED DIAPHRAGM SOLENOID VALVES $\Delta p = 0$ psi

2/2 NC



3

DIRECT ACTING SOLENOID VALVES

2/2

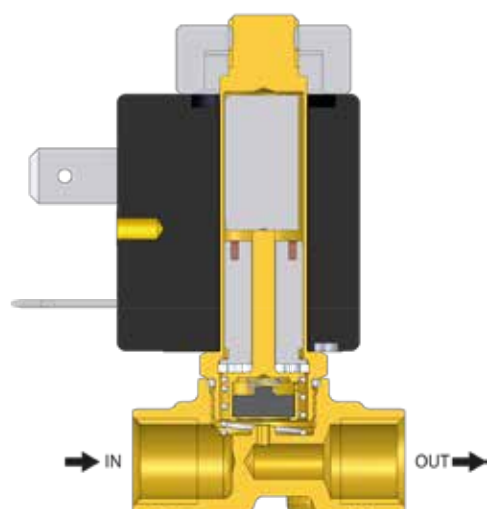
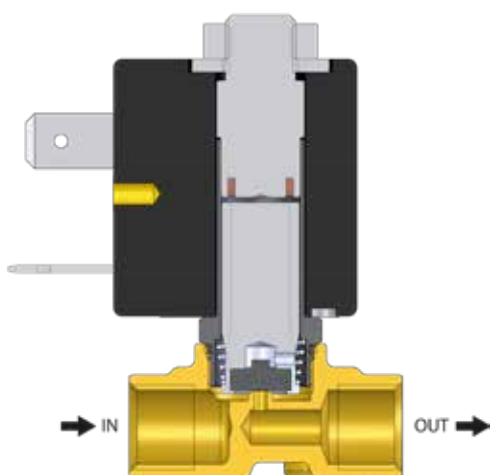


Direct acting 2/2 - NC and NO

In the 2/2-way direct acting solenoid valves, available in Normally Closed or Normally Open versions, the mobile plunger opens or closes the main orifice of the valve.

These type of valves work also with a minimum OPD zero bar up to a maximum OPD which varies according to the model and the power of the coil.

In both cases (NC or NO), the functioning is determined by the magnetic field generated by the current in the coil.



DIRECT ACTING SOLENOID VALVES

3/2



Direct acting 3/2 - NC and NO

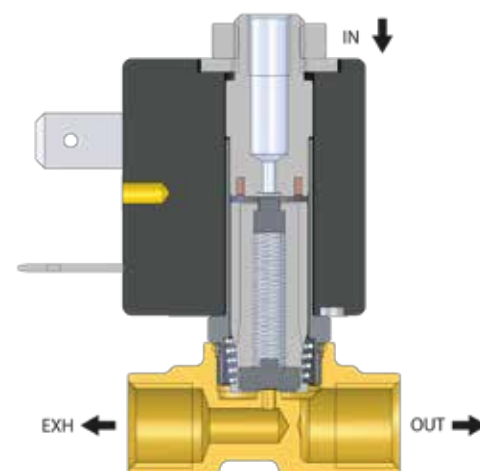
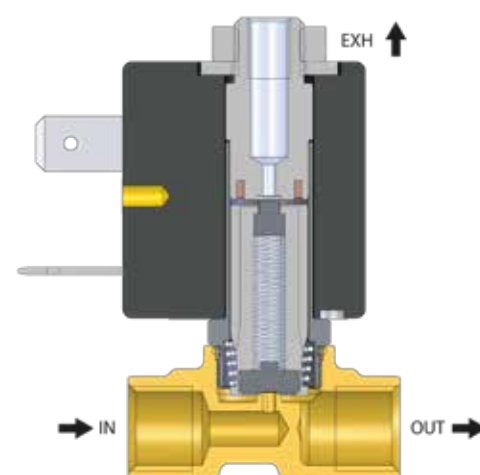
The 3/2-way direct acting solenoid valves have inlet and outlet connections carved/machined from in the valve body and an exhaust connection carved/machined from in the fixed core. The main and the exhaust orifices are intercepted by the shutters present in the mobile plunger.

These valves are available in the Normally Closed or Normally Open versions and can operate with a minimum OPD of zero bar up to a maximum OPD which varies according to the model.

In the NC version's, in rest position the outlet and exhaust are in communication with each other, while the incoming fluid is intercepted by the shutter. By energizing the coil, the main orifice is opened and the fluid can flow from the inlet to the outlet; the exhaust is closed.

In the NO version's, in rest position the main orifice is open and the fluid can flow from the inlet to the outlet, while the exhaust is closed. By energizing the coil the main orifice is closed and the outlet is in communication with the exhaust which is opened.

In both cases the functioning is determined by the magnetic field generated by the passing electric current in the coil.



SERVO-ASSISTED OR INDIRECT ACTING SOLENOID VALVES

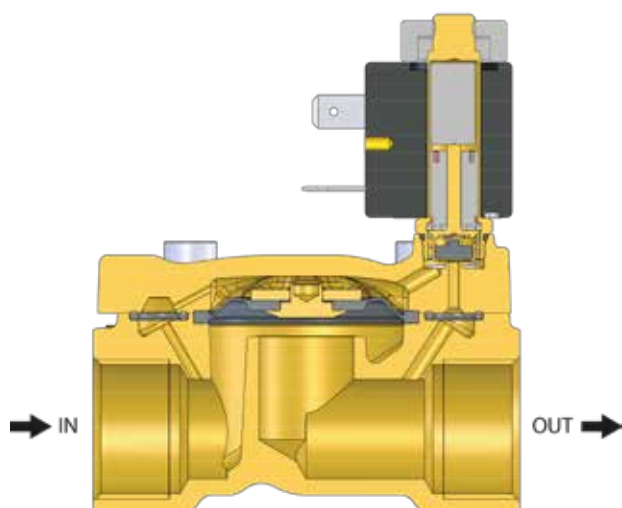
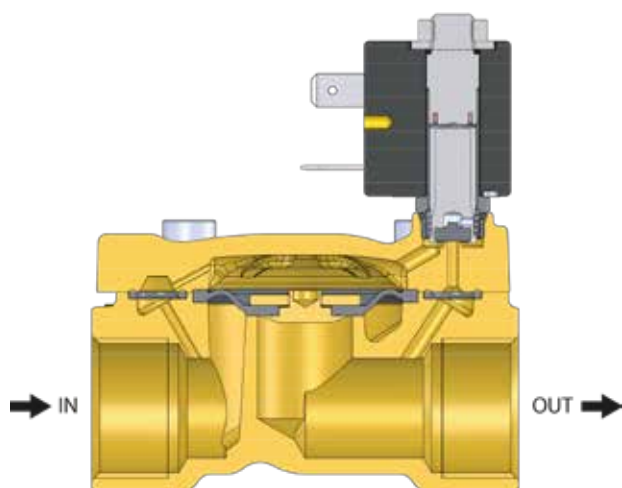


Servo-assisted 2/2 - NC and NO

In the servo-assisted solenoid valves, available in the 2/2-way Normally Closed or Normally Open versions, the main feature is the possibility to manage high flow rates compared the direct acting valves, while the fluid is intercepted by the diaphragm or by the piston which acts on the main orifice.

In these types of valves the opening or closing of the main orifice is determined by the min OPD, generated between the inlet and the outlet, which allows the movement of the diaphragm or piston. By energizing the coil the mobile plunger opens or closes the pilot orifice causing the relieve or the load of the fluid that acts in the top chamber of the diaphragm or piston, generating an imbalance of forces (Δp) able to allow the movement of the diaphragm or piston and therefore the opening or closing of the main orifice.

The functioning of the servo-assisted valves depends both from the magnetic field generated by the coil for controlling the pilot orifice and from the min OPD required for opening/closing the diaphragm or piston.



MIXED ACTING SOLENOID VALVES



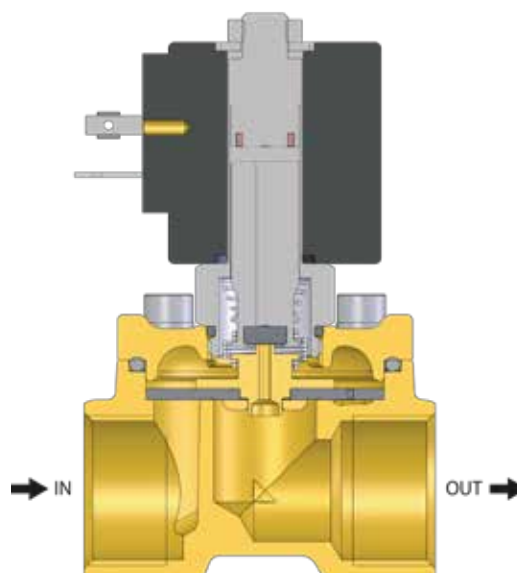
Mixed acting 2/2 - NC

The mixed acting solenoid valves, available in the 2/2-way Normally Closed version, are the combination of direct acting and servo-assisted valves.

In these valves the mobile plunger is mechanically connected to the diaphragm, in which the pilot orifice is in.

By energizing the coil, the mobile plunger opens the pilot orifice (releasing the pressure present in the top chamber of the diaphragm) and at the same time raises the diaphragm which opens the main orifice.

Partial opening of the valve occurs at zero bar pressure, while a minimum Δp is required for total opening.



GENERAL TECHNICAL INFORMATION


Differential pressure Δp

Differential pressure (or pressure drop) means the pressures difference between the valve's inlet and outlet.
The symbol is Δp .

Operating Pressure Difference (OPD)

Solenoid valves performances are measured with the maximum and minimum pressure difference between the valve inlet and outlet.
The maximum and minimum OPD are indicated notified for each valve model.

With MOPD (Maximum Operative Pressure Difference) indicates the maximum working Δp that the valve must overcome to allow the fluid to flow. With the same orifice, but with AC or DC voltage supply, the MOPD values can be different.

With mOPD (minimum Operative Pressure Difference) indicates the minimum working Δp to allow the opening or closing of the main orifice. In direct acting valves it can be 0 psi, while in servo-assisted valves it must always be > 0 psi.

Back pressure

Back pressure is the outlet pressure which works in the opposite direction to the desired flow. It is often generated due to kinks or bends in the pipes placed at the valve outlet, thus reducing the flow.

2-way solenoid valves don't allow the outlet pressure (or back pressure) to be higher than the inlet pressure.

Whenever this situation occur, the recommendation is to use check valves to prevent the back pressure to run over the upstream circuit of the valve.

Maximum allowable pressure (PS)

The maximum allowable pressure (PS) is the maximum pressure that the valve can withstand before having damages to the internal components and/or having external leakages.

It's not related with the MOPD as long as it must be higher than or in any case equal to the inlet pressure.

FLOW COEFFICIENTS


Kv and Cv flow coefficients

Each solenoid valve has a Kv or Cv flow rate coefficient which varies according to the type and the orifice diameter.

The flow rate coefficient Kv, which use the metric system units of measurement, defines the flow of water that crosses the solenoid valve with a differential pressure of 1 bar at a temperature between 5°C and 40°C and is determined as indicated by VDE 2173 standards.

It is expressed in: m³/h or l/min.

The flow rate coefficient Cv uses the units of measurement of the Anglo-Saxon system and defines the flow of water that cross the solenoid valve at 60°F with a differential pressure of 1 psi.

It is expressed in US gpm (US gallons per minute).

The two values cannot be compared, but there are conversion formulas:

$$K_v = 0.857 * C_v$$

$$C_v = 1.165 * K_v$$

Knowing the type of fluid, the working pressure and the acceptable pressure drop, the Kv or Cv flow rate coefficient allows to calculate the flow rate that crosses the solenoid valve and the relative size for the proper use in the application.

VISCOSITY



The viscosity of a fluid is the physical magnitude that measures the resistance to flow opposed by a fluid. The viscosity heavily influences the valve's flow rate and MOPD.

The maximum recommended viscosity, expressed in cSt (centiStokes), is indicated for each valve diameter in the catalog tables.

The use of fluids with higher viscosity values could lead to reduced performances and occlusion of the valves' orifices.

Kinematics viscosity	Engler	Kinematics viscosity	Engler
centiStokes – cSt = mm ² /s	°E	centiStokes – cSt = mm ² /s	°E
1	1.00	30	4.08
3	1.22	37	4.97
4	1.31	40	5.35
5	1.40	50	6.65
7	1.57	53	7.04
10	1.83	60	7.92
12	2.02	70	9.24
15	2.30	80	10.56
20	2.88	90	11.88
25	3.44	100	13.20

FLOW CALCULATION

Symbols	Units of measure	Description
K_v	m^3/h	Flow rate coefficient
Q	m^3/h	Flow rate
Q_n	Nm^3/h	Normal flow (20°C, 760mm Hg)
P_1	bar	Absolute inlet pressure (Pr + 1 bar)
P_2	bar	Absolute outlet pressure (Pr + 1 bar))
Δp	bar	Pressure drop (P1 - P2)
ρ	Kg/dm^3	Relative density to water (= 1)
ρ_n	Kg/dm^3	Normal density to air
G	Kg/h	Mass
T	°C	Inlet fluid temperature
V_1	m^3/Kg	Specific inlet volume
V_2	m^3/Kg	Specific outlet volume

Fluids	Formulas	
Liquids	$Q = K_v * \sqrt{\frac{\Delta p}{\rho}}$	
Gases	$\Delta p < \frac{P_1}{2} \rightarrow Q_n = 514 * K_v * \sqrt{\frac{\Delta p * P_2}{\rho_n * (273+T)}}$	$\Delta p > \frac{P_1}{2} \rightarrow Q_n = 257 * K_v * \sqrt{\frac{P_1}{\rho_n * (273+T)}}$
Air	$\Delta p < \frac{P_1}{2} \rightarrow Q_n = 26 * K_v * \sqrt{\Delta p * P_2}$	$\Delta p > \frac{P_1}{2} \rightarrow Q_n = K_v * P_1 * 13$
Steam	$\Delta p < \frac{P_1}{2} \rightarrow G = 31.6 * K_v * \sqrt{\frac{\Delta p}{V_2}}$	$\Delta p > \frac{P_1}{2} \rightarrow G = 31.6 * K_v * \sqrt{\frac{P_1}{V_1}}$

IP PROTECTION CLASS


The **CEI EN 60529/1997** (formerly CEI 70-1) standard classifies the protection degrees of enclosures for electrical equipments. The IP degree for the solenoid valves is indicated with two digits.

Solid bodies	
IP (1 st Digit)	Description
0	No protection
1	Protection from solid bodies > Ø 50 mm
2	Protection from solid bodies > Ø 12 mm
3	Protection from solid bodies > Ø 2.5 mm
4	Protection from solid bodies > Ø 1 mm
5	Protected against dusts (no harmful deposit)
6	Fully protected against dusts

Liquid bodies	
IP (2 nd Digit)	Description
0	No protection
1	Protection against vertical falls of water drops
2	Protection against falling drops of water or rain up to 15° from the vertical
3	Protection against falling drops of water or rain up to 60° from the vertical
4	Protection against water splashes from all directions
5	Protection against water jets
6	Protection against powerful jets of water
7	Protection against the effects of temporary diving
8	Protection against the effects of continuous diving

COILS TECHNICAL INFORMATION



Coils power

The power, or electrical absorption, indicated for each coil is it's registered at the ambient temperature of 68°F and at the nominal voltage, and is expressed in:

- Watt (W), for Direct Current (DC) power supplies; in the DC-powered coils, the active power remains constant both during the inrush phase and when the mobile plunger stroke cycle is completed.
- VoltAmpere (VA), for Alternating Current (AC) power supplies; in the AC-powered coils only the apparent power it's indicated in the holding state (when the mobile plunger has completed its stroke cycle); it must be considered that the apparent power during the inrush phase (at the electrical insertion) is always higher than the holding state.

$$P (W \text{ o } VA) = V (\text{Volt}) \times I (\text{Ampere}) = \frac{V^2 (\text{Volt})}{R (\text{Ohm } \Omega)}$$

The power can be expressed in Watts even in the case of AC power supplies; in this case there is a displacement between voltage and current indicated as power factor or cos φ (Phi). This value can vary between 0 and 1.

$$P (W) = V (\text{Volt}) \times I (\text{Ampere}) \times \cos \varphi$$



Continuous Service (ED)

The "Continuous Service (ED)" is intended as the maximum electrical insertion time tolerated by the coil compared to the thermal time constant of the coil.

Coils in Continuous Service are identified with ED100%, while for non-continuous service coils (e.g.: ED50%) it is necessary to intersperse electrical insertion times and rest times.

The ED is calculated with the following formula:

$$ED = \frac{\text{insertion time}}{\text{insertion time} + \text{rest time}} \times 100$$

Example:

$$ED = \frac{10'}{10' + 10'} \times 100 = ED 50\%$$

For non-continuous services it is possible to use coils with higher powers than the standard ones or to use coils with ambient temperatures higher than the indicated ones.



Coils insulation class

The insulation class identifies the maximum winding temperature that each coil can withstand to ensure normal operation.

When the winding is crossed by the current it heats up due to the Joule effect; the heating varies according to the time during which the coil is powered.

Aignep uses standard class H coils, which can work at a winding temperature of +356°F.



Ambient temperature

The minimum and maximum ambient temperature determines the safety limits dictated by the insulation class of the coil. It depends on the materials of the winding and encapsulation of the coil and is defined by the sector's directives.

TEMPERATURE VALUES CONVERSION TABLE

°F	°C	K	°F	°C	K	°F	°C	K
-40	-40	233.15	104	40	313.15	284	140	413.15
-31	-35	238.15	113	45	318.15	302	150	423.15
-22	-30	243.15	122	50	323.15	320	160	433.15
-13	-25	248.15	131	55	328.15	338	170	443.15
-4.0	-20	253.15	140	60	333.15	356	180	453.15
5.0	-15	258.15	149	65	338.15	374	190	463.15
14	-10	263.15	158	70	343.15	392	200	473.15
23	-5	268.15	167	75	348.15	428	220	493.15
32	0	273.15	176	80	353.15	464	240	513.15
41	5	278.15	185	85	358.15	500	260	533.15
50	10	283.15	194	90	363.15	536	280	553.15
59	15	288.15	203	95	368.15	572	300	573.15
68	20	293.15	212	100	373.15	662	350	623.15
77	25	298.15	230	110	383.15	752	400	673.15
86	30	303.15	248	120	393.15	842	450	723.15
95	35	308.15	266	130	403.15	932	500	773.15

PRESSURE VALUE CONVERSION TABLE

Psi	Bar	MPa	mH ₂ O	Psi	Bar	Mpa	mH ₂ O
1.45	0.1	0.01	1.02	203.00	14	1.40	142.80
2.90	0.2	0.02	2.04	217.50	15	1.50	153.00
4.35	0.3	0.03	3.06	232.00	16	1.60	163.20
5.80	0.4	0.04	4.08	246.50	17	1.70	173.40
7.25	0.5	0.05	5.10	261.00	18	1.80	183.60
8.70	0.6	0.06	6.12	275.50	19	1.90	193.80
10.15	0.7	0.07	7.14	290.00	20	2.00	204.00
11.60	0.8	0.08	8.16	304.50	21	2.10	214.20
13.05	0.9	0.09	9.18	319.00	22	2.20	224.40
14.50	1	0.10	10.20	333.50	23	2.30	234.60
21.75	1.5	0.15	15.30	348.00	24	2.40	244.80
29.00	2	0.20	20.40	362.50	25	2.50	255.00
36.25	2.5	0.25	25.50	377.00	26	2.60	265.20
43.50	3	0.30	30.60	391.50	27	2.70	275.40
50.75	3.5	0.35	35.70	406.00	28	2.80	285.60
58.00	4	0.40	40.80	420.50	29	2.90	295.80
65.25	4.5	0.45	45.90	435.00	30	3.00	306.00
72.50	5	0.50	51.00	507.50	35	3.50	357.00
79.75	5.5	0.55	56.00	580.00	40	4.00	408.00
87.00	6	0.60	61.20	652.50	45	4.50	459.00
94.25	6.5	0.65	66.30	725.00	50	5.00	510.00
101.50	7	0.70	71.40	797.50	55	5.50	561.00
108.75	7.5	0.75	76.50	870.00	60	6.00	612.00
116.00	8	0.80	81.60	942.50	65	6.50	663.00
123.25	8.5	0.85	86.70	1015.00	70	7.00	714.00
130.50	9	0.90	91.80	1087.50	75	7.50	765.00
137.75	9.5	0.95	96.90	1160.00	80	8.00	816.00
145.00	10	1.00	102.00	1232.50	85	8.50	867.00
159.50	11	1.10	112.20	1305.00	90	9.00	918.00
174.00	12	1.20	122.40	1377.50	95	9.50	969.00
188.50	13	1.30	132.60	1450.00	100	10.00	1020.00

STEAM: PRESSURE - TEMPERATURE CONVERSION TABLE

Relative pressure	Absolute pressure	Temperature		Specific volume
psi (g)	psi (a)	°F	°C	m ³ /Kg
0	14.69	212.0	100.0	1.673
1.45	16.14	216.7	102.6	1.533
2.90	17.59	223.2	106.2	1.414
4.35	19.04	225.3	107.4	1.312
7.25	21.94	232.9	111.6	1.149
10.15	24.84	239.7	115.4	1.024
14.50	29.19	248.7	120.4	0.881
21.75	36.44	261.7	127.6	0.714
29.00	43.69	272.7	133.7	0.603
36.25	50.94	282.2	139.0	0.522
43.50	58.19	290.7	143.7	0.461
50.75	65.44	298.4	148.0	0.413
58.00	72.69	305.6	152.0	0.374
65.25	79.94	311.9	155.5	0.342
72.50	87.19	318.0	158.9	0.315
87.00	101.69	329.0	165.0	0.272
101.50	116.19	338.9	170.5	0.240
116.00	130.69	347.7	175.4	0.215
130.50	145.19	356.0	180.0	0.194
145.00	159.69	363.4	184.1	0.177

RESPONSE TIMES



Response times

The response time of the opening (or closing) of a solenoid valve is defined as the time interval between the electrical insertion (or disconnection) and the moment in which the outlet (or inlet) pressure reaches 50% of the maximum value.

Valves type	Response times		Note
	Open	Close	
Direct acting NC 2/2 - 3/2	~ 10 ms	~ 20 ms	Response times may vary according to the fluid (gas or liquid), pressure, flow rate, viscosity and voltage supply (AC or DC).
Direct acting NO 2/2 - 3/2	~ 20 ms	~ 10 ms	
Servo-assisted NC 1/4" → 2"	50 ms → 500 ms	70 ms → 600 ms	
Servo-assisted NO 1/4" → 2"	70 ms → 600 ms	50 ms → 500 ms	

CHEMICAL COMPATIBILITY TABLE

[DOWNLOAD THE COMPLETE TABLE](#)


FLUIDS	BODY MATERIAL		SEALS		
	Brass	Stainless Steel AISI 316L	NBR	EPDM	FKM
Acetone	●	●	●	●	●
Acetylene	●	●	●	●	●
Argon	●	●	●	●	●
Benzene	●	●	●	●	●
Butane	●	●	●	●	●
Carbon dioxide dry (gas)	●	●	●	●	●
Carbon dioxide dry (liquid)	●	●	●	●	●
Carbon disulfide	●	●	●	●	●
Chloroform (100%)	●	●	●	●	●
Diesel fuel	●	●	●	●	●
Helium	●	●	●	●	●
Ethane	●	●	●	●	●
Ethanol	●	●	●	●	●
Ethyl acetate	●	●	●	●	●
Ethyl chloride	●	●	●	●	●
Ethylene glycol	●	●	●	●	●
Formaldehyde (100%)	●	●	●	●	●
Freon	●	●	●	●	●
Glycerine	●	●	●	●	●
Heptane	●	●	●	●	●
Hexane	●	●	●	●	●
Hydrogen	●	●	●	●	●
Hydrogen peroxide	●	●	●	●	●
Isobutane	●	●	●	●	●
Isopentane	●	●	●	●	●
Methane	●	●	●	●	●
Methanol	●	●	●	●	●
Methyl chloride	●	●	●	●	●
Mineral oil	●	●	●	●	●
Neon	●	●	●	●	●
Nitrobenzene	●	●	●	●	●
Nitrogen	●	●	●	●	●
Oxygen	●	●	●	●	●
Pentane	●	●	●	●	●
Petrol	●	●	●	●	●
Propane (LPG)	●	●	●	●	●
Propyl Alcohol	●	●	●	●	●
Toluene	●	●	●	●	●
Trichlorethylene dry	●	●	●	●	●
Vinegar	●	●	●	●	●
Water demineralized	●	●	●	●	●
Water (Hard)	●	●	●	●	●
Water (Hot <75°C)	●	●	●	●	●
Water (Hot-steam <140°C)	●	●	●	●	●
Water with glycol	●	●	●	●	●
Xylene	●	●	●	●	●

LEGEND:

● COMPATIBLE

● INCOMPATIBLE

● ASK TO TECHNICAL DEPARTMENT

SEALING MATERIALS FEATURES

Sealing materials	Temperature		Fluids
	min	max	
NBR	+14°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
NBR 	-40°F	+194°F	Air, inert gases, water, mineral oils, diesel, fuel oils
FKM	+14°F	+284°F	Mineral oils, gasoline, diesel, fuel oils
EPDM	+14°F	+284°F	Hot water, steam (max pressure 36 psi)
PTFE	-40°F	+356°F	Steam (max pressure 145 psi), solvents, aggressive fluids
RUBY	-40°F	+356°F	Water, hot water, demineralized water, steam (max pressure 145 psi), aggressive fluids

INSTALLATION AND MAINTENANCE

INSTALLATION'S WARNINGS

- Before to proceed with the installation, make sure that the valve model is suitable for the use in the application, verifying that fluid, temperatures, pressures and operating flow rates doesn't exceed the values indicated in the technical tables shown in the Aignep catalog and also on the website www.aignep.com.
- Make sure that the valve is correctly sized for the piping used and that the flow is flowing in the direction indicated by the arrow on the valve body.
- Make sure that there aren't foreign bodies or impurities in the fluid that could obstruct the passage and compromise the functionality of the valves; Aignep always recommends a filter installation upstream.
- For corrosive fluids and environments make sure that all the materials are compatible (contact Aignep in case of doubt or further information).
- It is recommended to install the valve in a horizontal position with the operator facing upwards to prevent possible impurities from depositing in the armature tube of the solenoid valve.
- During the installation on the pipes:
 - Make sure that the pipes are pressureless;
 - Assemble the valve with the pipes and/or fittings whose threads are compatible with the connection;
 - Avoid any kind of torsion or forcing on the valve;
 - Do not use the armature tube as a socket for screwing the valve;
 - Make sure that the connections to the piping are free of leaks (use appropriate PTFE sealants or tapes; pay attention to liquid sealants that can clog the valve operating orifices);
 - Make sure that the valve is not subjected to stresses and vibrations.
- It is recommended to install the valve in easy positions, to allow simple maintenance or replacement of the coil.
- Avoid the valve being immersed in liquids or exposed to jets of water or steam.
- The use of servo-assisted valves with free exhaust is not recommended, unless suitably sized.
- In case of condensation, use the anti-humidity kit (see Aignep catalog).
- WARNING:** to guarantee the indicated performances it is recommended to use Aignep's valves and coils.

ELECTRICAL CONNECTIONS

- The coil, when installed on the operator, can be rotated on its axis to place it in the desired position. Once the most suitable position is identified, anchor the coil by fixing the nut to the operator, with a maximum torque of 3.685 ft-lbs.
- Connect the coils correctly with the appropriate connectors, paying attention to the grounding.
- Aignep coils are suitable for continuous service ED 100%.

TEMPERATURES

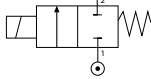
- Although the coils conform to high temperatures, it is always recommended to install the valves away from heat sources to avoid excessive overheating.
- Always check the operating temperatures in the catalog and if in doubt consult Aignep.
- The temperatures of use must take into account the environment and also the temperatures of the fluids.
- WARNING:** when energized the coils tend to overheat. Do not touch them with your hands.
- WARNING:** in case of installation with ambient temperature < +32°F, the freezing of the fluid may cause serious damage to the solenoid valve.

MAINTENANCE

- Before carrying out any type of maintenance or disassembly, in order to avoid possible damage to people or surrounding objects, make sure that the pressure in the circuit has been released.
- Make sure the coil is de-energized.
- Remove the nut using the correct size hex wrench and slide off the coil.
- Remove the operator kit with the appropriate hex wrench; it is advisable not to use tools that could damage the operator kit.
- In the diaphragm version remove also the cover by unscrewing the n. 4 screws.
- Inspect the valve by cleaning the individual components from possible foreign bodies and replace the parts worn or corroded by the use; it is recommended to use original Aignep spare parts only.
- Make sure all the components are correctly installed and then close the valve.
- To fix the operator kit on the valve body and the coil fixing nut, use respectively a maximum tightening torque of 7.37 ft-lbs and 3.685 ft-lbs.



2/2 NC



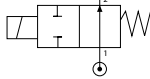
1/8" - 1/4"

Page 1.2





2/2 NO



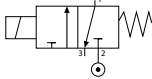
1/8" - 1/4"

Page 1.4





3/2 NC



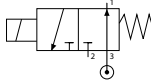
1/8" - 1/4"

Page 1.6





3/2 NO



1/8" - 1/4"

Page 1.8





22 mm

Series A

Page 11.2





30 mm

Series B

Page 11.3





Connectors

Page 11.7



DIRECT ACTING SOLENOID VALVES WITH BRASS BODY



II 2 G/D Ex h



CSA C22.2



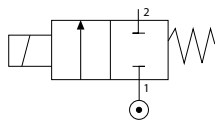
Series 01F

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

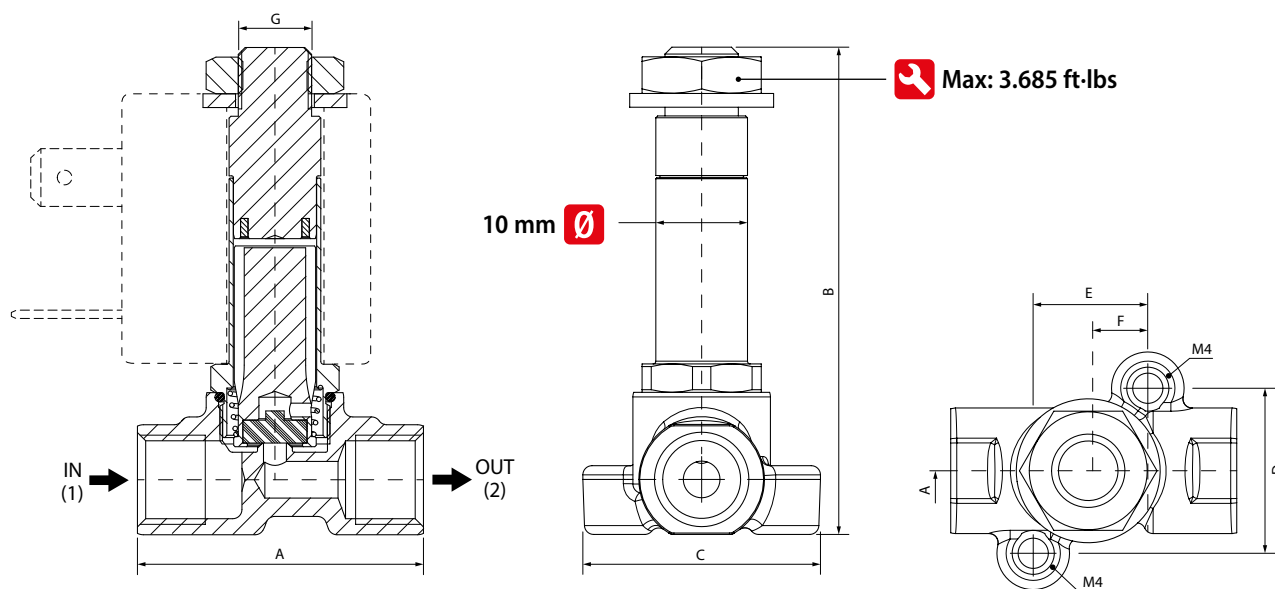
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 1 F	0 2	1	1 5	N	0	N	A	A
	02 = 1/8"	1 = 2/2 NC	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
			04 = 5/32 (4)					3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC				
①	①	NPTF	inch (mm)	cSt	gpm (m³/h)							
01F 02 1 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)	6.5	7.5	22	A - SOL10
01F 02 1 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)	8	11	30	B - SOL11
01F 02 1 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)	6.5	7.5	22	A - SOL10
01F 02 1 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)	6.5	7.5	22	A - SOL10
01F 02 1 04 _0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)	8	11	30	B - SOL11
01F 03 1 15 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)	6.5	7.5	22	A - SOL10
01F 03 1 02 _0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)	8	11	30	B - SOL11
01F 03 1 25 _0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)	6.5	7.5	22	A - SOL10
01F 03 1 03 _0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)	6.5	7.5	22	A - SOL10
01F 03 1 04 _0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



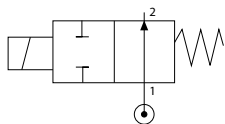
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 1 F	0 2	2	1 5	N	0	N	A	A
	02 = 1/8"	2 = 2/2 NO	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
								3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

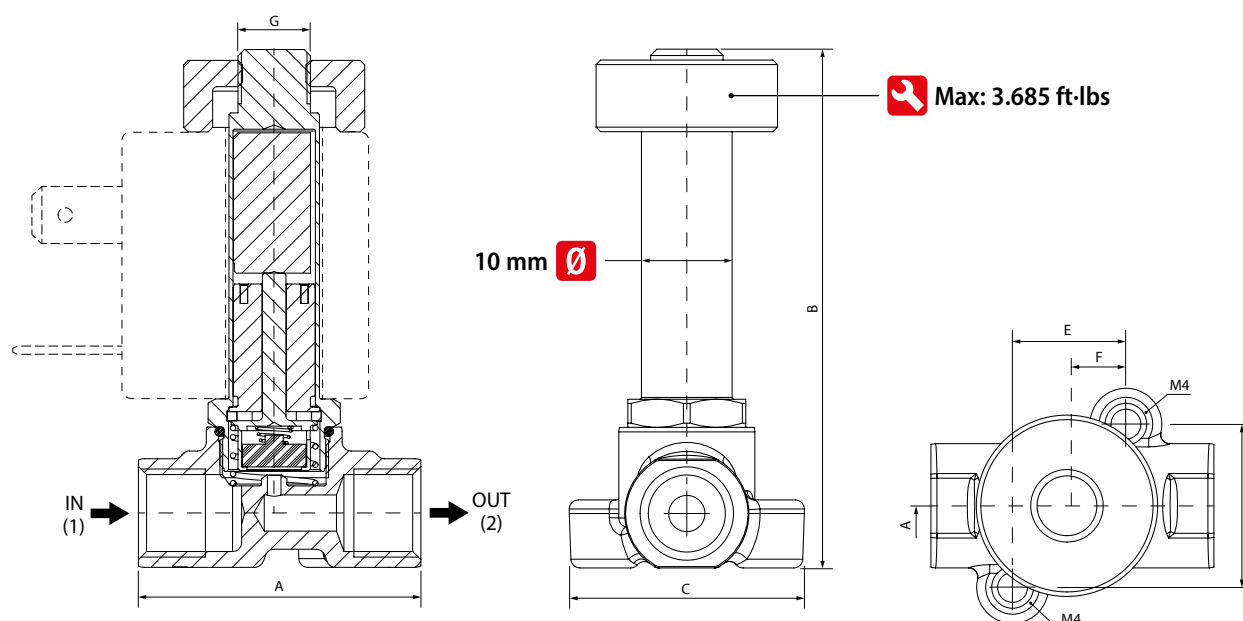
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
						psi (bar)		
		NPTF	inch (mm)	cSt	gpm (m³/h)	Min	Max DC	Max AC
①	①							
01F 02 2 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)
01F 02 2 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)
01F 02 2 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)
01F 02 2 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)
01F 03 2 15 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)
01F 03 2 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)
01F 03 2 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)
01F 03 2 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)

Power		Coils	
DC	AC	Size	Series
W	VA	mm	A - Page 11.2 B - Page 11.3
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11
-	7.5	22	A - SOL10
8	11	30	B - SOL11

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



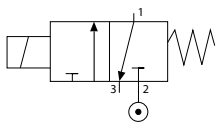
Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
1/8"	1.228 (31.2)	2.251 (57.2)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 1
1/4"	1.456 (37)	2.370 (60.2)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 1

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H -  - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

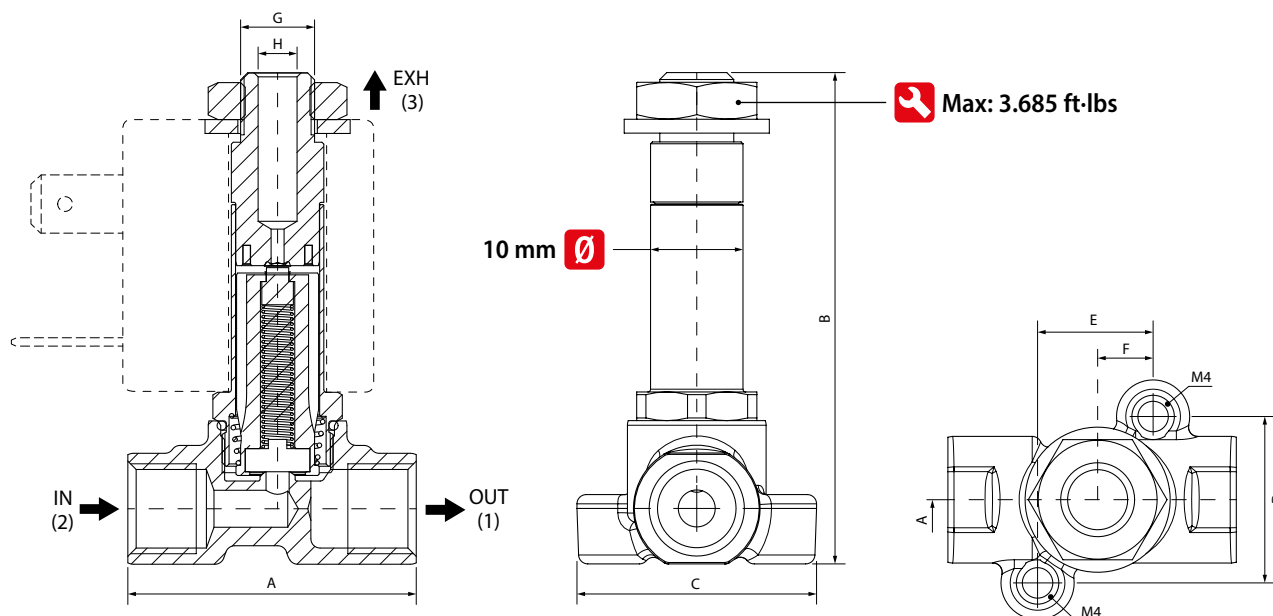
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 1 F	0 2	3	1 5	N	0	N	A	A
	02 = 1/8"	3 = 3/2 NC	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
			04 = 5/32 (4)					3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
01F 02 3 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	196 (13.5) 196 (13.5)	196 (13.5) 196 (13.5)	6.5	7.5	22	A - SOL10
01F 02 3 02 _ 0 N			5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	116 (8) 116 (8)	116 (8) 116 (8)	6.5	7.5	22	A - SOL10
01F 02 3 25 _ 0 N			3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	73 (5) 73 (5)	73 (5) 73 (5)	6.5	7.5	22	A - SOL10
01F 02 3 03 _ 0 N			1/8 (3)	1/16 (1.4)	25	0.23 (0.20)	0.06 (0.05)	0	51 (3.5) 51 (3.5)	51 (3.5) 51 (3.5)	6.5	7.5	22	A - SOL10
01F 02 3 04 _ 0 N			5/32 (4)	1/16 (1.4)	25	0.35 (0.30)	0.06 (0.05)	0	15 (1) 15 (1)	15 (1) 15 (1)	6.5	7.5	22	A - SOL10
01F 03 3 15 _ 0 N		1/4"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	196 (13.5) 196 (13.5)	196 (13.5) 196 (13.5)	6.5	7.5	22	A - SOL10
01F 03 3 02 _ 0 N			5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	116 (8) 116 (8)	116 (8) 116 (8)	6.5	7.5	22	A - SOL10
01F 03 3 25 _ 0 N			3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	73 (5) 73 (5)	73 (5) 73 (5)	6.5	7.5	22	A - SOL10
01F 03 3 03 _ 0 N			1/8 (3)	1/16 (1.4)	25	0.23 (0.20)	0.06 (0.05)	0	51 (3.5) 51 (3.5)	51 (3.5) 51 (3.5)	6.5	7.5	22	A - SOL10
01F 03 3 04 _ 0 N			5/32 (4)	1/16 (1.4)	25	0.35 (0.30)	0.06 (0.05)	0	15 (1) 15 (1)	15 (1) 15 (1)	6.5	7.5	22	A - SOL10

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



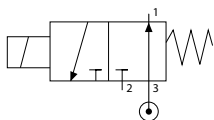
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series 01F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 01F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Food industry, Coffee & vending
- Air, Inert gases, Vacuum
- Industrial processes, Automation
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical
- Chemical and Petrochemical industry



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 1 F	0 2 02 = 1/8" 03 = 1/4"	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	A A = A series - SOL10	A A = 12V DC B = B series - SOL11 1 = 24V AC 2 = 110V AC 3 = 220V AC

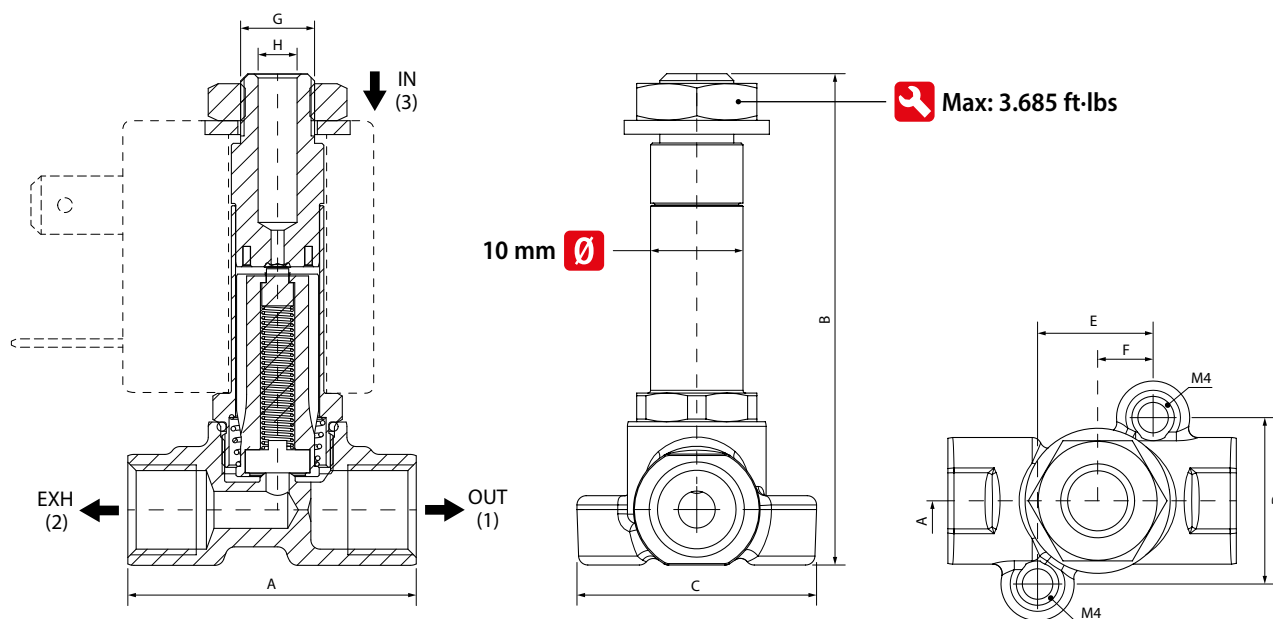
Valves and coils are supplied separately.
Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	
01F 02 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
01F 02 4 02 _ 0 N			1/16 (1.4)	5/64 (2)	25	0.06 (0.05)	0.10 (0.09)	0	145 (10)	145 (10)	8	11	30	B - SOL11
01F 02 4 25 _ 0 N			1/16 (1.4)	3/32 (2.5)	25	0.06 (0.05)	0.17 (0.15)	0	58 (4)	145 (10)	6.5	7.5	22	A - SOL10
01F 03 4 15 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	8	11	30	B - SOL11
01F 03 4 02 _ 0 N			1/16 (1.4)	5/64 (2)	25	0.06 (0.05)	0.10 (0.09)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
01F 03 4 25 _ 0 N			1/16 (1.4)	3/32 (2.5)	25	0.06 (0.05)	0.17 (0.15)	0	58 (4)	145 (10)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

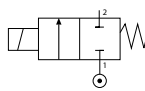
Coil not included



Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5



2/2 NC



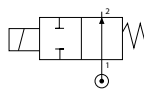
1/8" - 1/4"

Page 2.2

Ex



2/2 NO



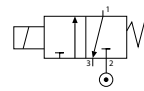
1/8" - 1/4"

Page 2.4

Ex



3/2 NC



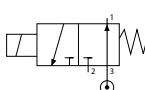
1/8" - 1/4"

Page 2.6

Ex



3/2 NO



1/8" - 1/4"

Page 2.8

Ex



22 mm

Series A

Page 11.2

UL US
CSA C22.2



30 mm

Series B

Page 11.3

UL US
CSA C22.2



Connectors

Page 11.7

UL US
CSA C22.2

DIRECT ACTING SOLENOID VALVES IN STAINLESS STEEL 316L

AISI 316L

Ex
II 2 G/D Ex h

UL US
CSA C22.2



Series X1F

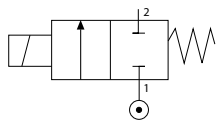
X1F

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C


Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 1 F	0 2	1	1 5	N	0	N	A	A
	02 = 1/8"	1 = 2/2 NC	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
			04 = 5/32 (4)					3 = 220V AC

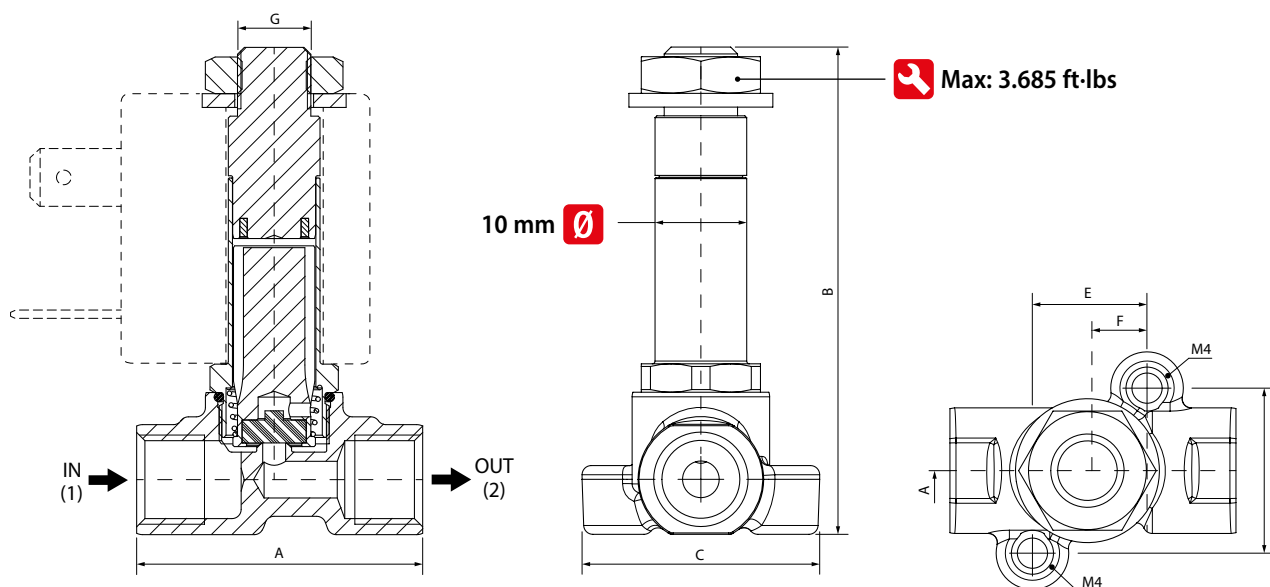
Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						Min	Max DC	Max AC	DC W	AC VA	Size mm	Series
①	①	NPTF	inch (mm)	cSt	gpm (m³/h)							
X1F 02 1 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)	6.5	7.5	22	A - SOL10
X1F 02 1 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)	8	11	30	B - SOL11
X1F 02 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)	6.5	7.5	22	A - SOL10
X1F 02 1 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)	6.5	7.5	22	A - SOL10
X1F 02 1 04 _ 0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)	8	11	30	B - SOL11
X1F 03 1 15 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)	6.5	7.5	22	A - SOL10
X1F 03 1 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)	8	11	30	B - SOL11
X1F 03 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)	6.5	7.5	22	A - SOL10
X1F 03 1 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)	6.5	7.5	22	A - SOL10
X1F 03 1 04 _ 0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)	8	11	30	B - SOL11
X1F 03 1 15 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	232 (16) 580 (40)	435 (30) 580 (40)	6.5	7.5	22	A - SOL10
X1F 03 1 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	174 (12) 435 (30)	363 (25) 580 (40)	8	11	30	B - SOL11
X1F 03 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5) 189 (13)	261 (18) 435 (30)	6.5	7.5	22	A - SOL10
X1F 03 1 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	44 (3) 102 (7)	145 (10) 232 (16)	6.5	7.5	22	A - SOL10
X1F 03 1 04 _ 0 N			5/32 (4)	53	0.35 (0.30)	0	15 (1) 36 (2.5)	58 (4) 116 (8)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



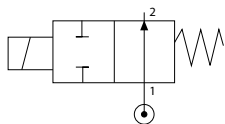
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 0.75
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

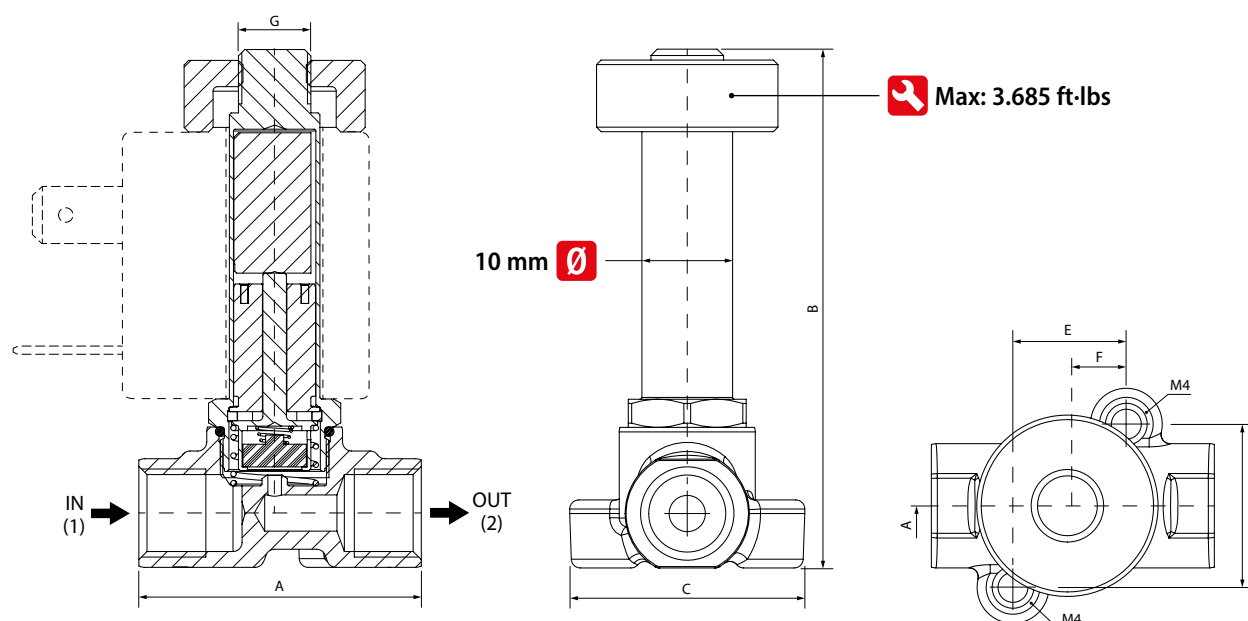
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 1 F	0 2	2	1 5	N	0	N	A	A
	02 = 1/8"	2 = 2/2 NO	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
								3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
①	①	NPTF	inch (mm)	cSt	gpm (m³/h)	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
X1F 02 2 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)	-	7.5	22	A - SOL10
X1F 02 2 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)	8	11	30	B - SOL11
X1F 02 2 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)	-	7.5	22	A - SOL10
X1F 02 2 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)	8	11	30	B - SOL11
X1F 03 2 15 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)	-	7.5	22	A - SOL10
X1F 03 2 02 _ 0 N			5/64 (2)	37	0.10 (0.09)	0	-	145 (10)	8	11	30	B - SOL11
X1F 03 2 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	94 (6.5)	-	7.5	22	A - SOL10
X1F 03 2 03 _ 0 N			1/8 (3)	53	0.23 (0.20)	0	-	61 (4.2)	8	11	30	B - SOL11

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



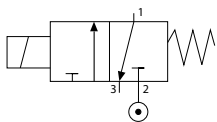
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/8"	1.228 (31.2)	2.251 (57.2)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.255 (6.5)	M8 x 1
1/4"	1.456 (37)	2.370 (60.2)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 1

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NC

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

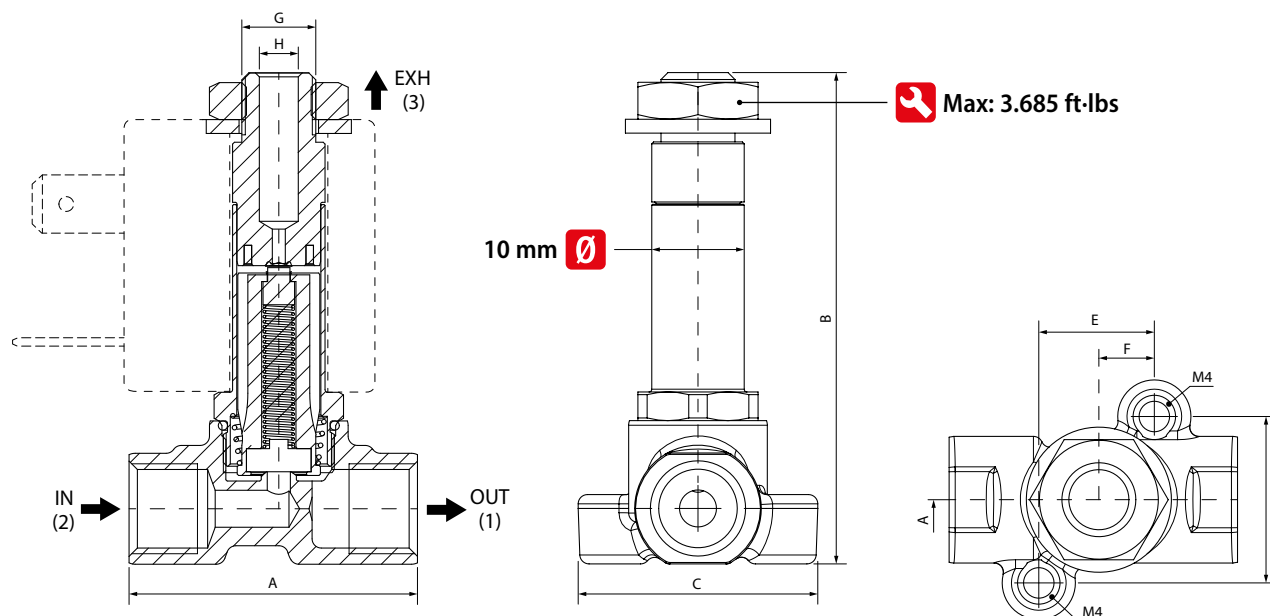
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 1 F	0 2	3	1 5	N	0	N	A	A
	02 = 1/8"	3 = 3/2 NC	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
			03 = 1/8 (3)					2 = 110V AC
			04 = 5/32 (4)					3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	
X1F 02 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	196 (13.5)	196 (13.5)	6.5	7.5	22	A - SOL10
X1F 02 3 02 _0 N			5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	116 (8)	116 (8)	8	11	30	B - SOL11
X1F 02 3 25 _0 N			3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	73 (5)	73 (5)	6.5	7.5	22	A - SOL10
X1F 02 3 03 _0 N			1/8 (3)	1/16 (1.4)	25	0.23 (0.20)	0.06 (0.05)	0	51 (3.5)	51 (3.5)	8	11	30	B - SOL11
X1F 02 3 04 _0 N			5/32 (4)	1/16 (1.4)	25	0.35 (0.30)	0.06 (0.05)	0	15 (1)	15 (1)	6.5	7.5	22	A - SOL10
X1F 03 3 15 _0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	196 (13.5)	196 (13.5)	8	11	30	B - SOL11
X1F 03 3 02 _0 N			5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	116 (8)	116 (8)	6.5	7.5	22	A - SOL10
X1F 03 3 25 _0 N			3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	73 (5)	73 (5)	8	11	30	B - SOL11
X1F 03 3 03 _0 N			1/8 (3)	1/16 (1.4)	25	0.23 (0.20)	0.06 (0.05)	0	51 (3.5)	51 (3.5)	6.5	7.5	22	A - SOL10
X1F 03 3 04 _0 N			5/32 (4)	1/16 (1.4)	25	0.35 (0.30)	0.06 (0.05)	0	15 (1)	15 (1)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



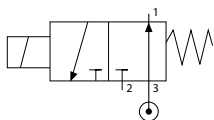
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5

Series X1F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NO

1/8" - 1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Corrosive liquids
- Air, Inert and aggressive gases, Vacuum
- Food industry
- Laser cutting, Welding, Metallurgy
- Oxygen, Steam, Medical
- Chemical and Petrochemical Industry



Silver-plated shading ring on request



Ordering codes

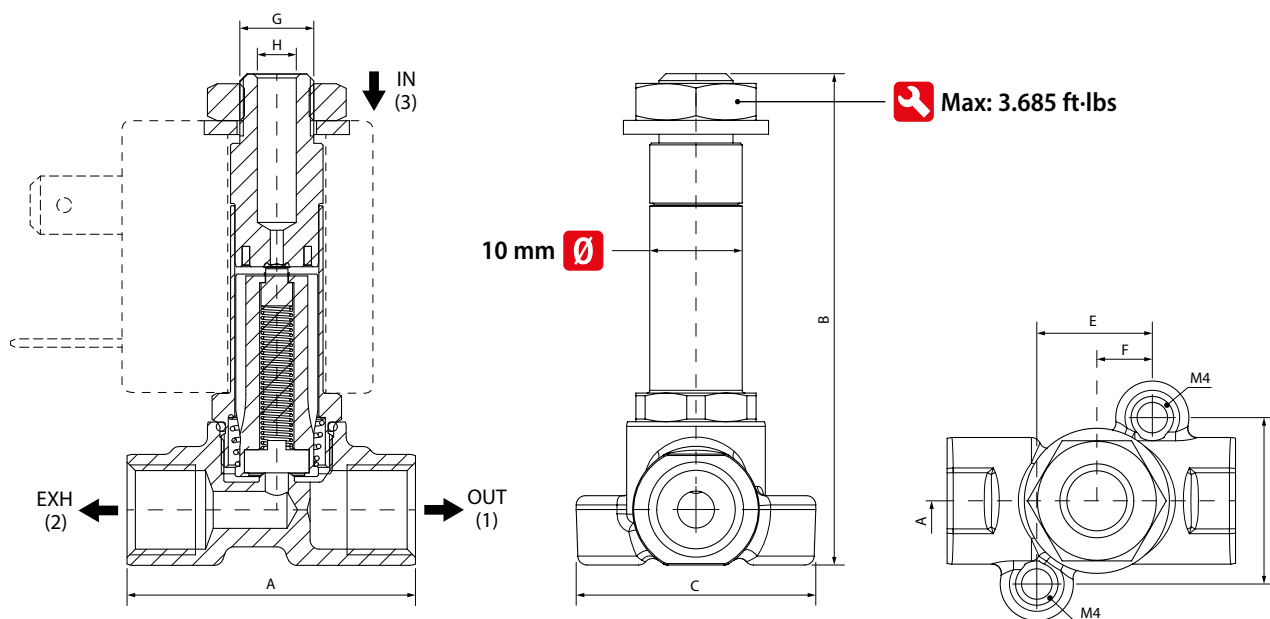
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 1 F	0 2	4	1 5	N	0	N	A	A
	02 = 1/8"	4 = 3/2 NO	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	A = A series - SOL10	A = 12V DC
	03 = 1/4"		02 = 5/64 (2)	E = EPDM			B = B series - SOL11	B = 24V DC
			25 = 3/32 (2.5)	V = FKM				1 = 24V AC
								2 = 110V AC
								3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	
X1F 02 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
X1F 02 4 02 _ 0 N			1/16 (1.4)	5/64 (2)	25	0.06 (0.05)	0.10 (0.09)	0	145 (10)	145 (10)	8	11	30	B - SOL11
X1F 02 4 25 _ 0 N			1/16 (1.4)	3/32 (2.5)	25	0.06 (0.05)	0.17 (0.15)	0	58 (4)	145 (10)	6.5	7.5	22	A - SOL10
X1F 03 4 15 _ 0 N		1/4"	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	8	11	30	B - SOL11
X1F 03 4 02 _ 0 N			1/16 (1.4)	5/64 (2)	25	0.06 (0.05)	0.10 (0.09)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
X1F 03 4 25 _ 0 N			1/16 (1.4)	3/32 (2.5)	25	0.06 (0.05)	0.17 (0.15)	0	58 (4)	145 (10)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

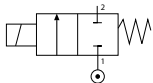
Coil not included



Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
1/8"	1.228 (31.2)	2.090 (53.1)	1.019 (25.9)	0.708 (18)	0.492 (12.5)	0.236 (6)	M8 x 0.75	M5
1/4"	1.456 (37)	2.208 (56.1)	1.141 (29)	0.826 (21)	0.472 (12)	0.236 (6)	M8 x 0.75	M5



2/2 NC



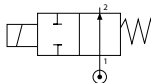
25 x 25 mm

Page 3.2

Ex



2/2 NO



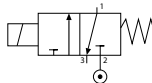
25 x 25 mm

Page 3.4

Ex



3/2 NC



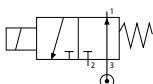
25 x 25 mm

Page 3.6

Ex



3/2 NO



25 x 25 mm

Page 3.8

Ex



22 mm

Series A

Page 11.2

UL US
CSA C22.2



30 mm

Series B

Page 11.3

UL US
CSA C22.2



Connectors

Page 11.7

UL US
CSA C22.2

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY - $P_b \leq 0.1\%$

CW510L / $P_b \leq 0.1\%$

Ex
II 2 G/D Ex h

C **UL** **US**
CSA C22.2



Series F1F

F1F

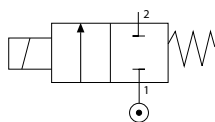
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NC

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

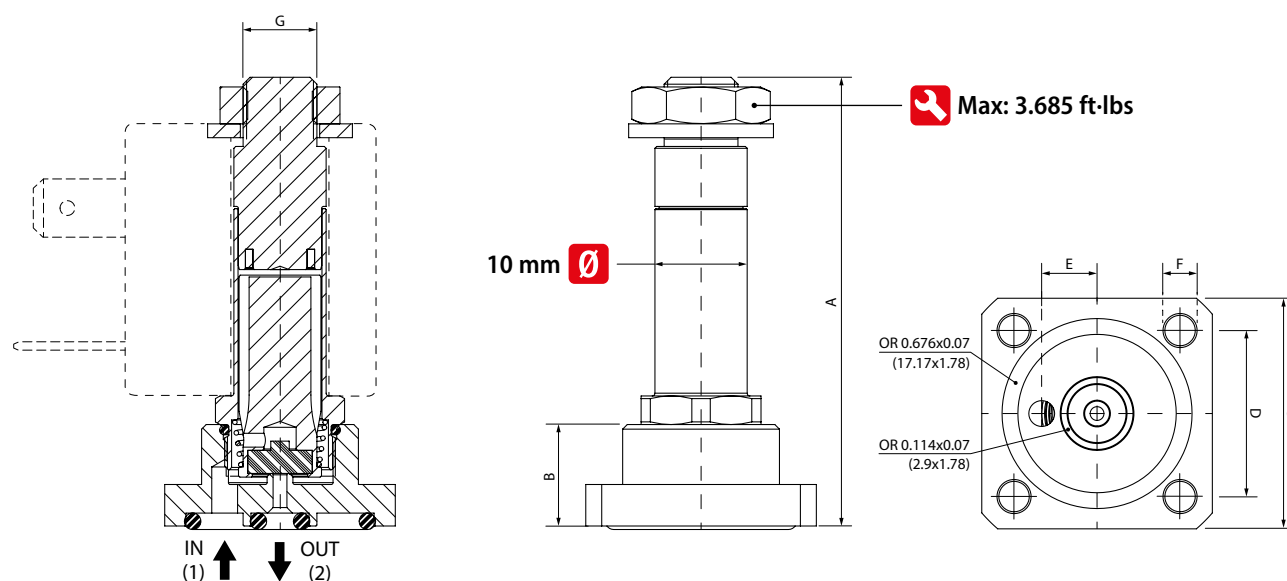
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 1 F	J 4	1	1 5	N	0	A	A
	J4 = □25x25 mm	1 = 2/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N = NBR E = EPDM V = FKM	0 = Standard	A = A series - SOL10 B = B series - SOL11	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.							

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils		
						Min	Max DC	Max AC	DC W	AC VA	Size mm	Series	
F1F J4 1 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	25x25 mm	1/16 (1.5)	25	0.07 (0.06)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10	B - SOL11
F1F J4 1 02 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	37	0.10 (0.09)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10	
F1F J4 1 25 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10	B - SOL11
							580 (40)	580 (40)	8	11	30	B - SOL11	
							435 (30)	580 (40)	8	11	30	B - SOL11	
							189 (13)	435 (30)	8	11	30	B - SOL11	

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M8 x 0.75

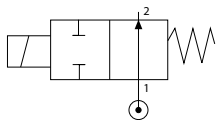
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NO

25 x 25 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 1 F	J 4 J4 = □25x25 mm	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	A A = A series - SOL10 B = B series - SOL11	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

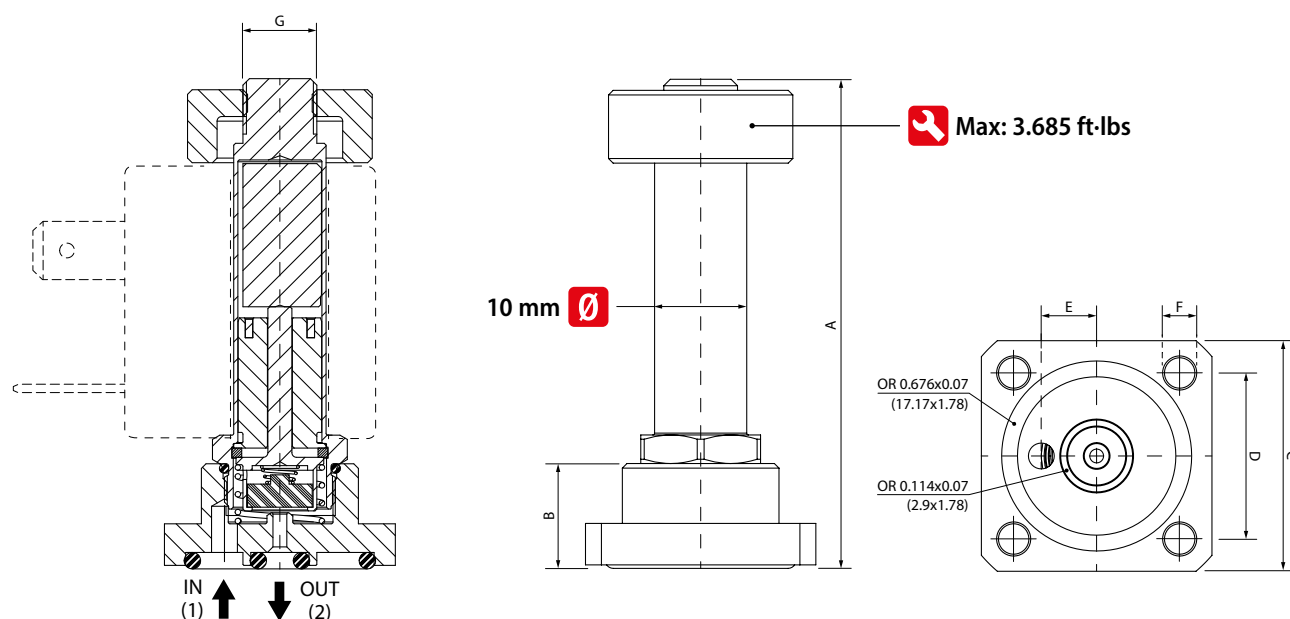
Valves and coils are supplied separately.
Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
			inch (mm)	cSt	gpm (m³/h)	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
F1F J4 2 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	25x25 mm	1/16 (1.5)	25	0.07 (0.06)	0	-	261 (18)	-	7.5	22	A - SOL10
F1F J4 2 02 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	37	0.10 (0.09)	0	-	261 (18)	8	11	30	B - SOL11
F1F J4 2 25 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	-	145 (10)	-	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
							-	94 (6.5)	-	7.5	22	A - SOL10
							94 (6.5)	94 (6.5)	8	11	30	B - SOL11

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
25x25 mm	2.271 (57.7)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M8 x 1

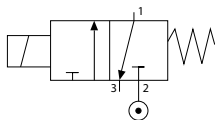
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NC

25 x 25 mm

**CW510L
Pb ≤ 0.1%**



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 1 F	J 4 J4 = □25x25 mm	3 3 = 3/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	A A = A series - SOL10 B = B series - SOL11	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

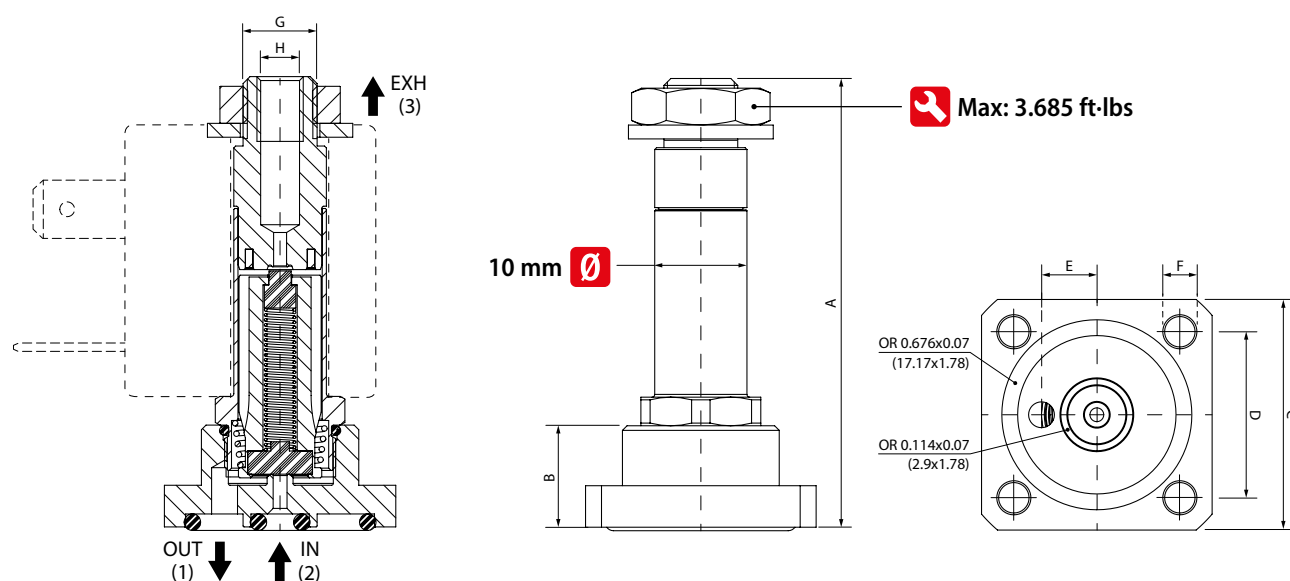
Valves and coils are supplied separately.
Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①		inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
F1F J4 3 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.5)	1/16 (1.4)	25	0.07 (0.06)	0.06 (0.05)	0	196 (13.5)	196 (13.5)	6.5	7.5	22	A - SOL10
										196 (13.5)	196 (13.5)	8	11	30
F1F J4 3 02 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		5/64 (2)	1/16 (1.4)	25	0.10 (0.09)	0.06 (0.05)	0	116 (8)	116 (8)	6.5	7.5	22	A - SOL10
										116 (8)	116 (8)	8	11	30
F1F J4 3 25 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	1/16 (1.4)	25	0.17 (0.15)	0.06 (0.05)	0	73 (5)	73 (5)	6.5	7.5	22	A - SOL10
										73 (5)	73 (5)	8	11	30

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	H	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M5	M8 x 0.75

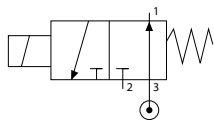
Series F1F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NO

25 x 25 mm

**CW510L
Pb ≤ 0.1%**



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F1F

- Universal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

580 psi (40 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 1 F	J 4 J4 = □25x25 mm	4 4 = 3/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	A A = A series - SOL10 B = B series - SOL11	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

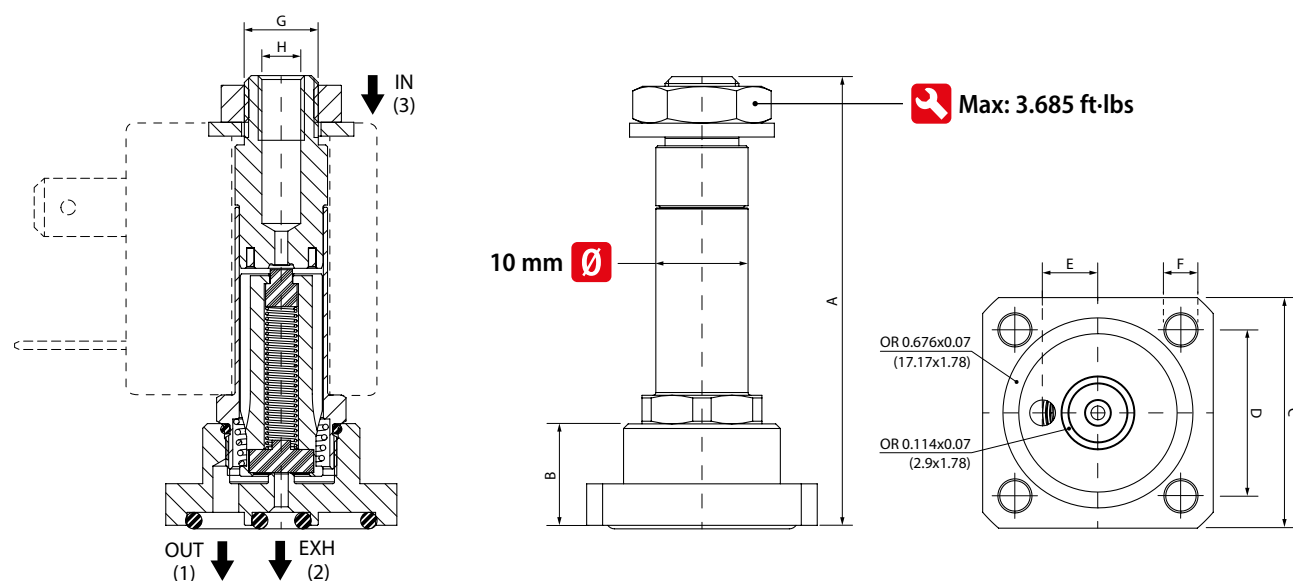
Valves and coils are supplied separately.
Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①		inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
F1F J4 4 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	1/8"	1/16 (1.4)	1/16 (1.5)	25	0.06 (0.05)	0.07 (0.06)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
F1F J4 4 02 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		1/16 (1.4)	5/64 (2)	25	0.06 (0.05)	0.10 (0.09)	0	145 (10)	145 (10)	8	11	30	B - SOL11
									145 (10)	145 (10)	6.5	7.5	22	A - SOL10
F1F J4 4 25 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		1/16 (1.4)	3/32 (2.5)	25	0.06 (0.05)	0.17 (0.15)	0	58 (4)	145 (10)	8	11	30	B - SOL11
									145 (10)	145 (10)	6.5	7.5	22	A - SOL10
										145 (10)	145 (10)	8	11	30

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

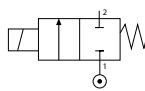
Coil not included



Size	A	B	C	D	E	F	H	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
25x25 mm	1.915 (48.65)	0.433 (11)	0.984 (25)	0.708 (18)	0.236 (6)	0.129 (3.3)	M5	M8 x 0.75



2/2 NC



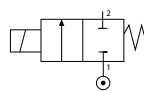
1/4"

Page 4.2





2/2 NC



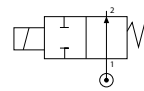
3/8" - 1/2"

Page 4.4





2/2 NO



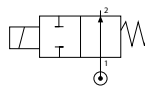
1/4"

Page 4.6





2/2 NO



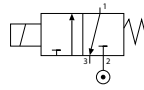
3/8" - 1/2"

Page 4.8





3/2 NC



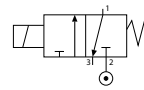
1/4"

Page 4.10





3/2 NC



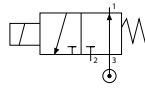
3/8" - 1/2"

Page 4.12





3/2 NO



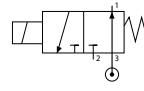
1/4"

Page 4.14





3/2 NO



3/8" - 1/2"

Page 4.16



Series 02F

Coils & Connectors



30 mm

Series C

Page 11.4





30 mm

Series D

Page 11.5





36 mm

Series E

Page 11.6





Connectors

Page 11.7



DIRECT ACTING SOLENOID VALVES WITH BRASS BODY



II 2 G/D Ex h

C **UL** US
CSA C22.2



Series 02F

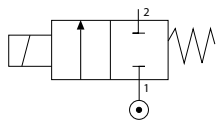
02F

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - RUBY
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

1450 psi (100 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 3	1	0 1	N	0	N	C	A
	03 = 1/4"	1 = 2/2 NC	01 = 1/32 (1) 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5) 64 = 1/4 (6.4)	N = NBR F = NBR E = EPDM V = FKM P = PTFE R = RUBY	0 = Standard 3 = Stainless Steel seat (on request)	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 03 1 01 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) F = NBR ❄️ -40°F +194°F (-40°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) P = PTFE -40°F +356°F (-40°C +180°C) R = RUBY * -40°F +356°F (-40°C +180°C)	NPTF	1/32 (1)	25	0.05 (0.04)	0	1450 (100)	1450 (100)	8	14	30	C - SOL20
02F 03 1 15 _ 0 N			1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)	14	21	30	D - SOL20
02F 03 1 02 _ 0 N			5/64 (2)	37	0.12 (0.10)	0	725 (50)	725 (50)	22	31	36	E - SOL21
02F 03 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	508 (35)	725 (50)	8	14	30	C - SOL20
02F 03 1 03 _ 0 N			1/8 (3)	53	0.24 (0.21)	0	725 (50)	725 (50)	14	21	30	D - SOL20
02F 03 1 04 _ 0 N			5/32 (4)	53	0.41 (0.35)	0	435 (30)	580 (40)	22	31	36	E - SOL21
02F 03 1 05 _ 0 N			13/64 (5)	53	0.59 (0.51)	0	653 (45)	725 (50)	8	14	30	C - SOL20
02F 03 1 64 _ 0 N			1/4 (6.4)	53	0.76 (0.65)	0	305 (21)	508 (35)	14	21	30	D - SOL20
							435 (30)	580 (40)	22	31	36	E - SOL21
							145 (10)	305 (21)	8	14	30	C - SOL20
							232 (16)	435 (30)	14	21	30	D - SOL20
							580 (40)	580 (40)	22	31	36	E - SOL21
							44 (3)	145 (10)	8	14	30	C - SOL20
							87 (6)	203 (14)	14	21	30	D - SOL20
							218 (15)	290 (20)	22	31	36	E - SOL21
							20 (1.4)	73 (5)	8	14	30	C - SOL20
							32 (2.2)	102 (7)	14	21	30	D - SOL20
							80 (5.5)	145 (10)	22	31	36	E - SOL21
							-	36 (2.5)	-	14	30	C - SOL20
							22 (1.5)	51 (3.5)	14	21	30	D - SOL20
							65 (4.5)	73 (5)	22	31	36	E - SOL21

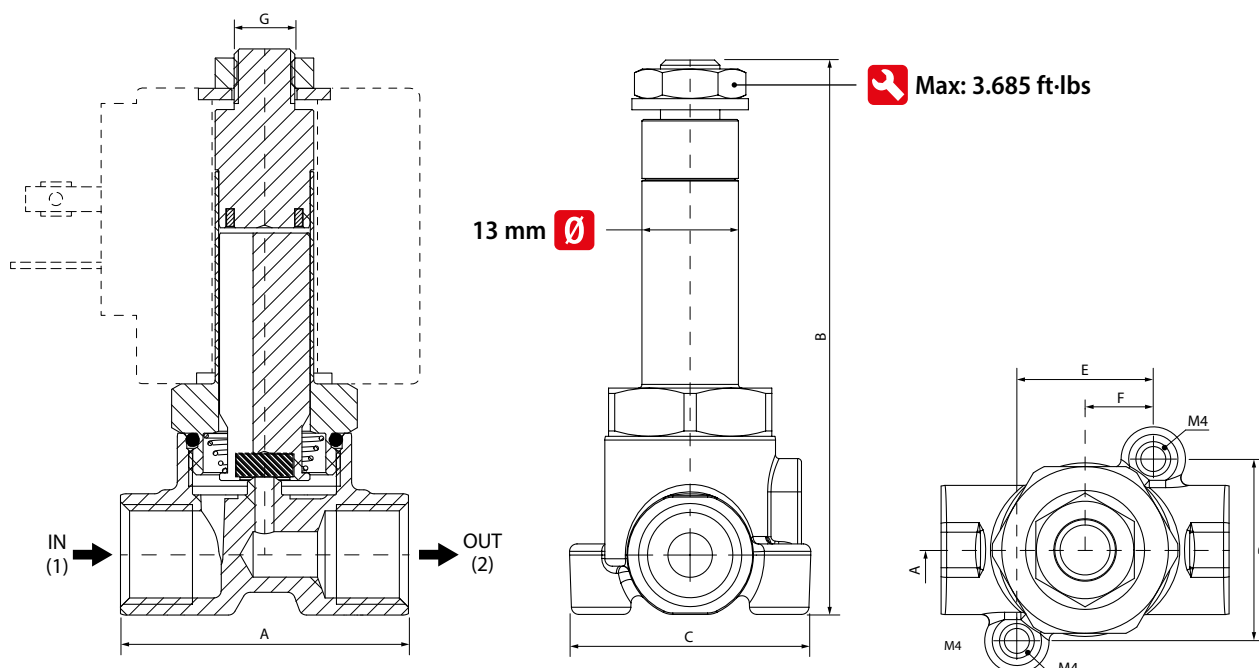
① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE & RUBY - P max = 145 psi (10 bar)

Allowable leakage: PTFE & RUBY = max 0.08 gph (300 cm³/h)

* RUBY - orifice max Ø 3/32" (2.5 mm): Only with stainless steel seat

Coil not included



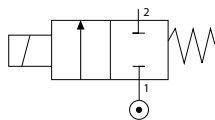
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NC

3/8" - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C


Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 4 04 = 3/8" 05 = 1/2"	1 1 = 2/2 NC	0 3 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5) 64 = 1/4 (6.4)	N N = NBR F = NBR E = EPDM V = FKM P = PTFE	0 0 = Standard	N N = NPTF	C C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

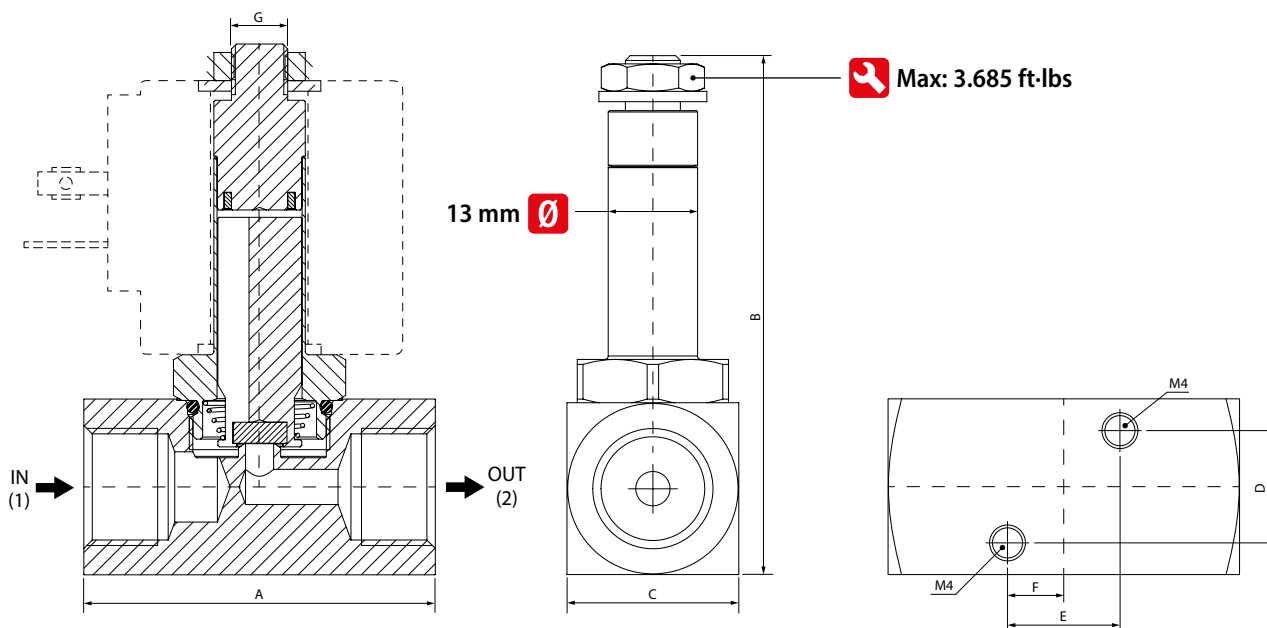
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
			inch (mm)	cSt	gpm (m ³ /h)	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 04 1 03 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) F = NBR -40°F +194°F (-40°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) P = PTFE -40°F +356°F (-40°C +180°C)	3/8"	1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)	8	14	30	C - SOL20
02F 04 1 04 _ 0 N							232 (16)	435 (30)	14	21	30	D - SOL20
02F 04 1 05 _ 0 N							580 (40)	580 (40)	22	31	36	E - SOL21
02F 04 1 64 _ 0 N			5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)	8	14	30	C - SOL20
02F 05 1 03 _ 0 N							87 (6)	203 (14)	14	21	30	D - SOL20
02F 05 1 04 _ 0 N							218 (15)	290 (20)	22	31	36	E - SOL21
02F 05 1 05 _ 0 N			13/64 (5)	53	0.59 (0.51)	0	20 (1.4)	73 (5)	8	14	30	C - SOL20
02F 05 1 64 _ 0 N							32 (2.2)	102 (7)	14	21	30	D - SOL20
							80 (5.5)	145 (10)	22	31	36	E - SOL21
			1/4 (6.4)	53	0.76 (0.65)	0	-	36 (2.5)	-	14	30	C - SOL20
							22 (1.5)	51 (3.5)	14	21	30	D - SOL20
							65 (4.5)	73 (5)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE - P max = 145 psi (10 bar)

Allowable leakage: PTFE = max 0.08 gph (300 cm³/h)

Coil not included



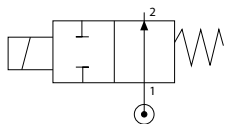
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 3 03 = 1/4"	2 2 = 2/2 NO	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N N = NBR E = EPDM V = FKM	0 0 = Standard	N N = NPTF	C C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

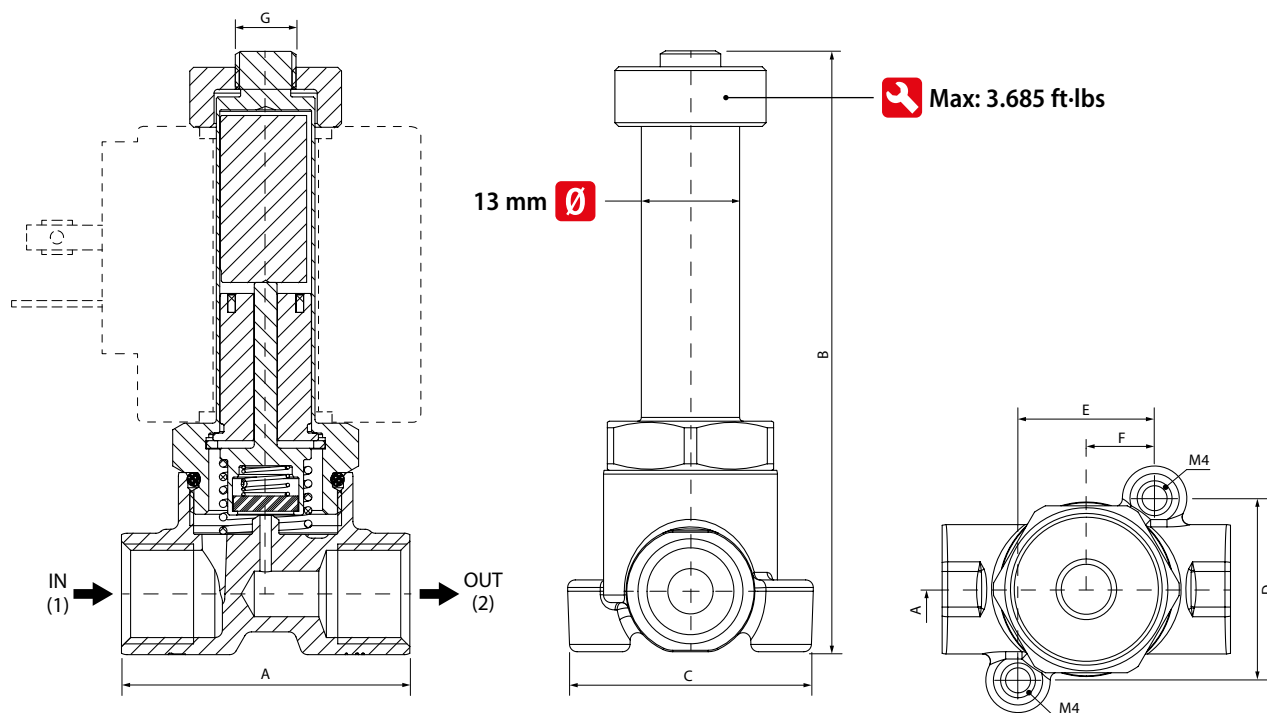
Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	
02F 03 2 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	NPTF	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)	-	14	30	C - SOL20
02F 03 2 02 _ 0 N			5/64 (2)	37	0.12 (0.10)	0	-	261 (18)	-	14	30	C - SOL20
02F 03 2 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	174 (12)	-	14	30	C - SOL20
02F 03 2 03 _ 0 N			1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	-	14	30	C - SOL20
02F 03 2 04 _ 0 N			5/32 (4)	53	0.41 (0.35)	0	-	65 (4.5)	-	14	30	C - SOL20
02F 03 2 05 _ 0 N			13/64 (5)	53	0.59 (0.51)	0	-	36 (2.5)	-	14	30	C - SOL20

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



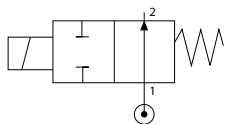
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/4"	1.496 (38)	3.129 (79.5)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

2/2 NO

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C


Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Stainless Steel armature tube on request



Ordering codes

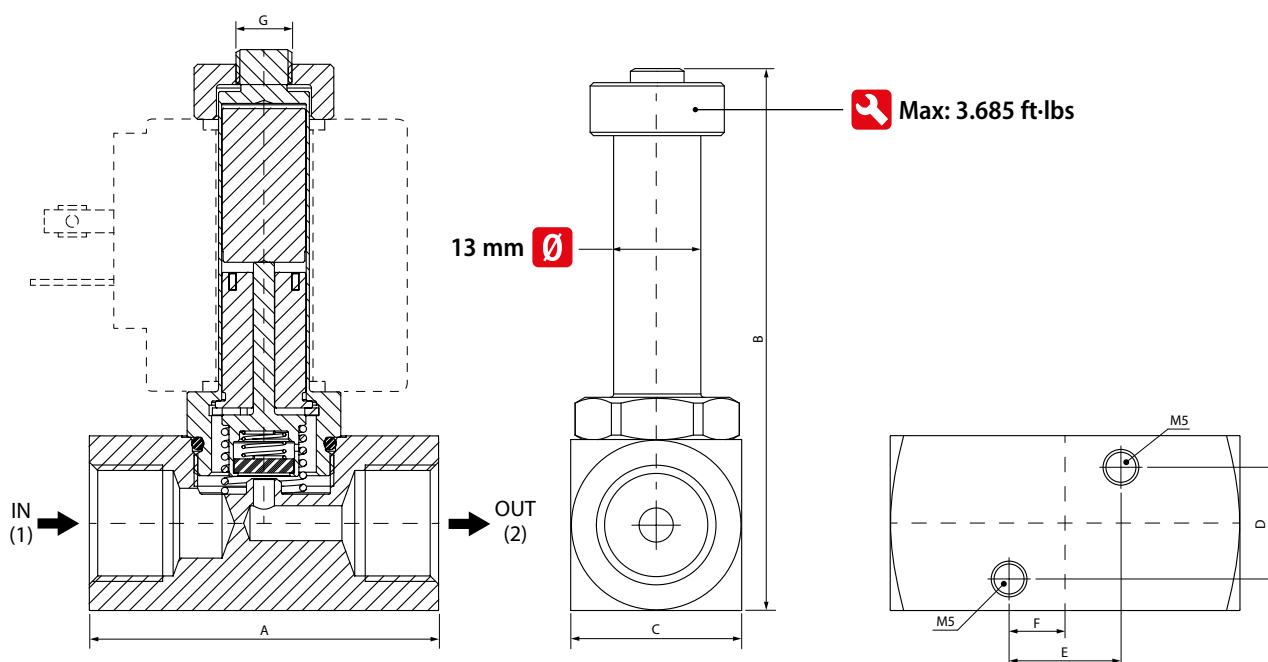
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 4	2	0 3	N	0	N	C	A
	04 = 3/8"	2 = 2/2 NO	03 = 1/8 (3)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20	A = 12V DC
	05 = 1/2"		04 = 5/32 (4)	E = EPDM			D = D series - SOL20	B = 24V DC
			05 = 13/64 (5)	V = FKM			E = E series - SOL21	1 = 24V AC
								2 = 110V AC
								3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						Min	Max DC	Max AC	DC W	AC VA	Size mm	Series C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 04 2 03 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	3/8"	1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	-	14	30	C - SOL20
02F 04 2 04 _ 0 N							109 (7.5)	109 (7.5)	14	21	30	D - SOL20
02F 04 2 05 _ 0 N							109 (7.5)	109 (7.5)	22	31	36	E - SOL21
02F 05 2 03 _ 0 N		1/2"	5/32 (4)	53	0.41 (0.35)	0	-	65 (4.5)	-	14	30	C - SOL20
02F 05 2 04 _ 0 N							65 (4.5)	65 (4.5)	14	21	30	D - SOL20
02F 05 2 05 _ 0 N							65 (4.5)	65 (4.5)	22	31	36	E - SOL21
02F 05 2 03 _ 0 N			13/64 (5)	53	0.59 (0.51)	0	-	36 (2.5)	-	14	30	C - SOL20
02F 05 2 04 _ 0 N							36 (2.5)	36 (2.5)	14	21	30	D - SOL20
02F 05 2 05 _ 0 N							36 (2.5)	36 (2.5)	22	31	36	E - SOL21

① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



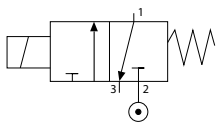
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
3/8"	1.968 (50)	3.161 (80.3)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1
1/2"	2.283 (58)	3.161 (80.3)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

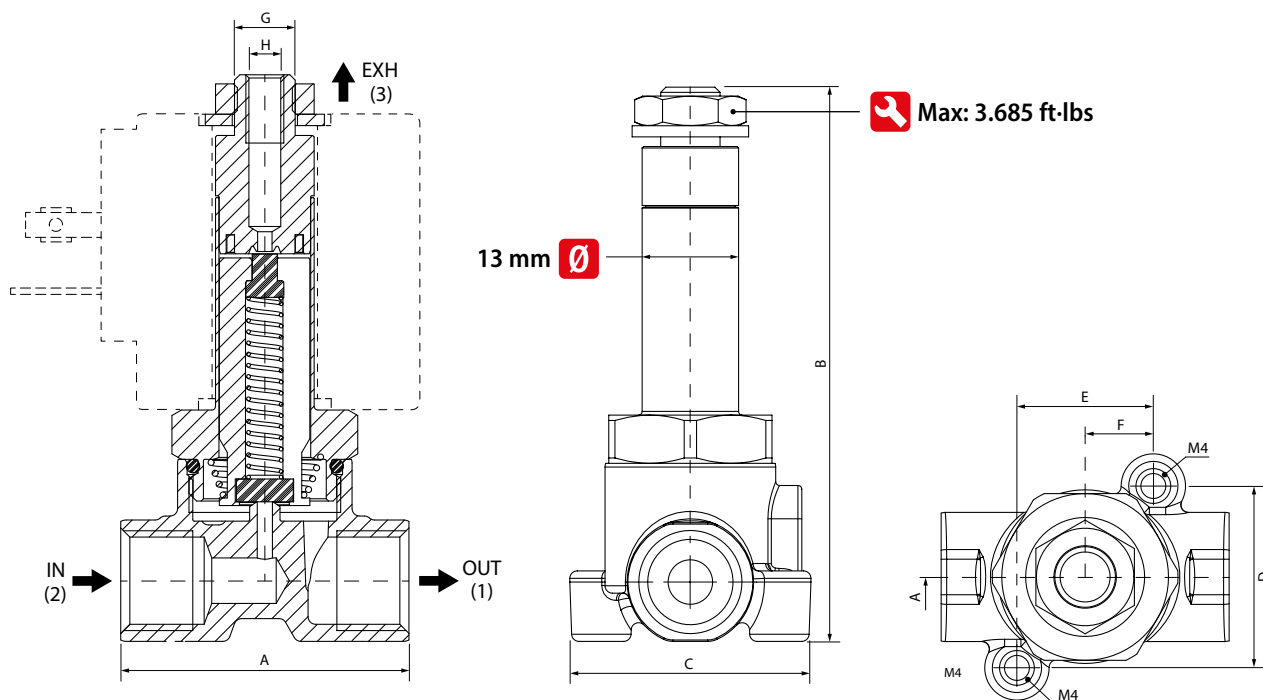
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 3	3	1 5	N	0	N	C	A
	03 = 1/4"	3 = 3/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)		
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)		
			IN	EXH		IN	EXH	Min	Max DC	Max AC
02F 03 3 15 _0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	5/64 (1.9)	25	0.07 (0.06)	0.12 (0.10)	0	363 (25) 363 (25) 363 (25)	363 (25) 363 (25) 363 (25)
02F 03 3 02 _0 N			5/64 (2)	5/64 (1.9)	37	0.12 (0.10)	0.12 (0.10)	0	261 (18) 261 (18) 261 (18)	261 (18) 261 (18) 261 (18)
02F 03 3 25 _0 N			3/32 (2.5)	5/64 (1.9)	37	0.17 (0.15)	0.12 (0.10)	0	189 (13) 189 (13) 189 (13)	189 (13) 189 (13) 189 (13)
02F 03 3 03 _0 N			1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10) 145 (10) 145 (10)	145 (10) 145 (10) 145 (10)
02F 03 3 04 _0 N			5/32 (4)	5/64 (1.9)	37	0.41 (0.35)	0.12 (0.10)	0	87 (6) 87 (6) 87 (6)	87 (6) 87 (6) 87 (6)
02F 03 3 05 _0 N			13/64 (5)	5/64 (1.9)	37	0.59 (0.51)	0.12 (0.10)	0	44 (3) 44 (3) 44 (3)	44 (3) 44 (3) 44 (3)

① Select seal material

With steam: **EPDM - $P_{max} = 36 \text{ psi (2.5 bar)}$**

Coil not included



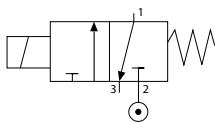
Size	A <i>inch (mm)</i>	B <i>inch (mm)</i>	C <i>inch (mm)</i>	D <i>inch (mm)</i>	E <i>inch (mm)</i>	F <i>inch (mm)</i>	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NC

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

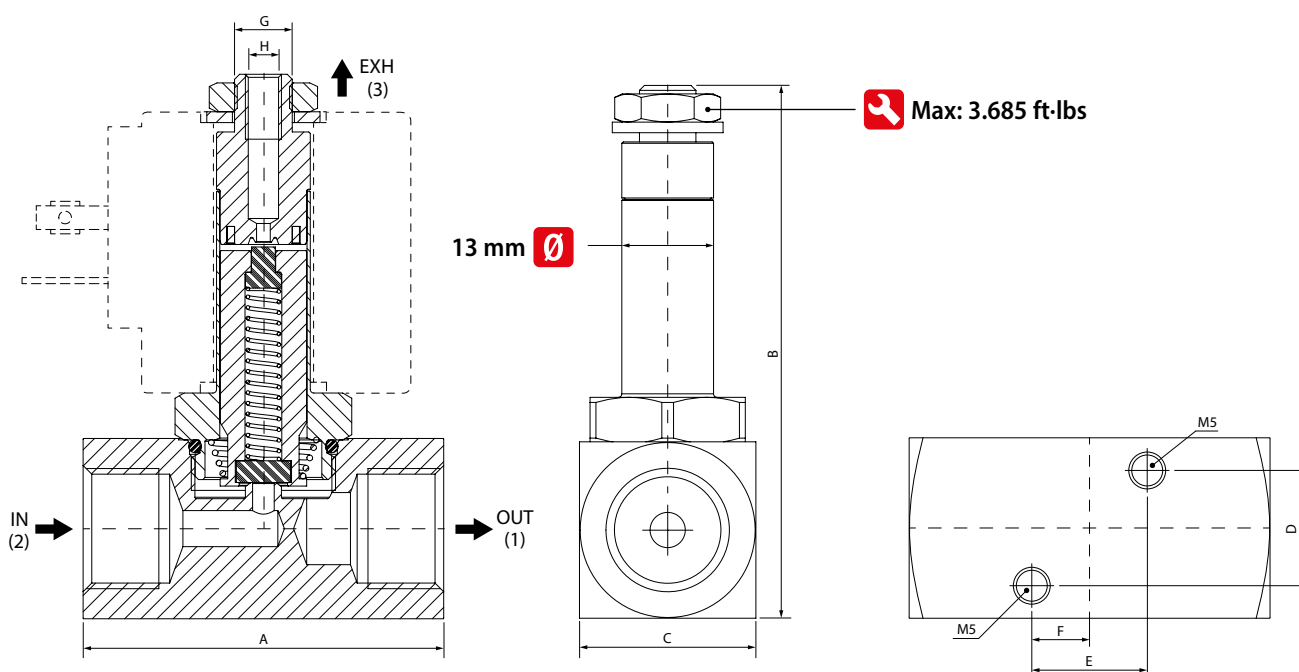
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 4	3	0 3	N	0	N	C	A
	04 = 3/8"	3 = 3/2 NC	03 = 1/8 (3)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20	A = 12V DC
	05 = 1/2"		04 = 5/32 (4)	E = EPDM			D = D series - SOL20	B = 24V DC
			05 = 13/64 (5)	V = FKM			E = E series - SOL21	1 = 24V AC
								2 = 110V AC
								3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 04 3 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	3/8"	1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10)	145 (10)	8	14	30	C - SOL20
02F 04 3 02 _ 0 N			5/32 (4)	5/64 (1.9)	37	0.41 (0.35)	0.12 (0.10)	0	87 (6)	87 (6)	14	21	30	D - SOL20
02F 04 3 25 _ 0 N			13/64 (5)	5/64 (1.9)	37	0.59 (0.51)	0.12 (0.10)	0	44 (3)	44 (3)	22	31	36	E - SOL21
02F 05 3 03 _ 0 N		1/2"	1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10)	145 (10)	8	14	30	C - SOL20
02F 05 3 04 _ 0 N			5/32 (4)	5/64 (1.9)	37	0.41 (0.35)	0.12 (0.10)	0	87 (6)	87 (6)	14	21	30	D - SOL20
02F 05 3 05 _ 0 N			13/64 (5)	5/64 (1.9)	37	0.59 (0.51)	0.12 (0.10)	0	44 (3)	44 (3)	22	31	36	E - SOL21
									145 (10)	145 (10)	8	14	30	C - SOL20
									87 (6)	87 (6)	14	21	30	D - SOL20
									44 (3)	44 (3)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



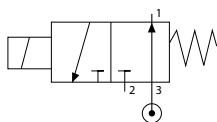
Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

1/4"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

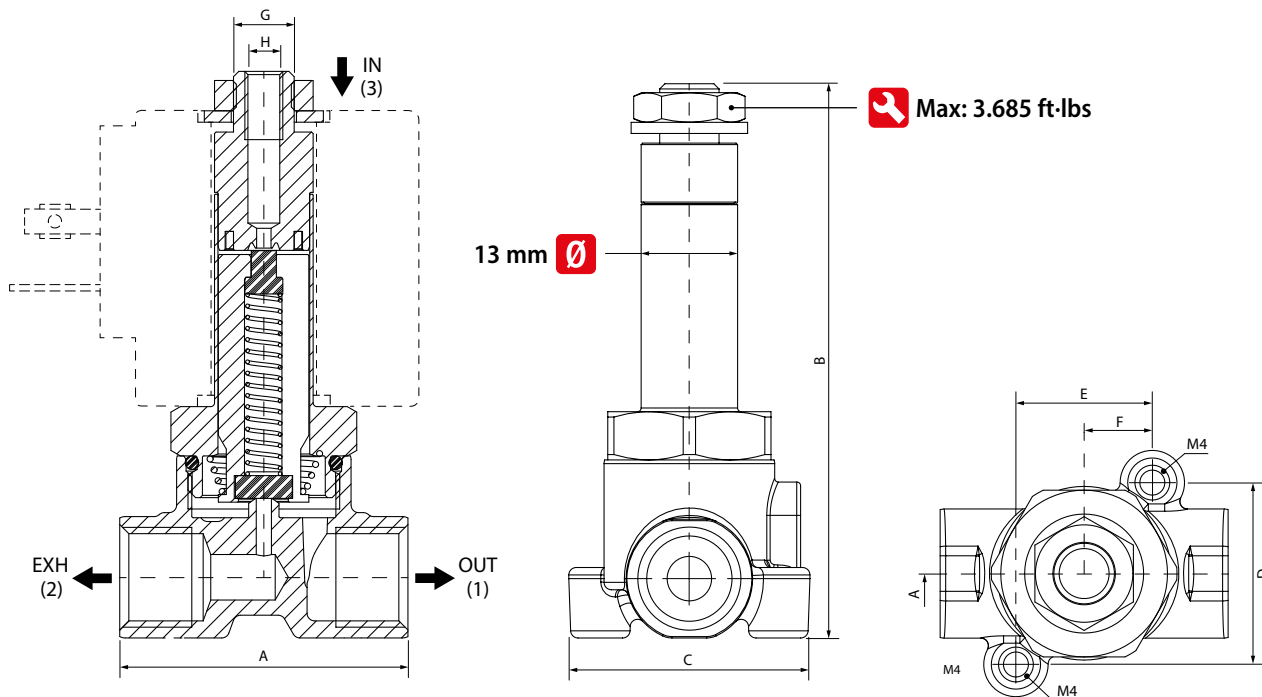
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 3	4	1 5	N	0	N	C	A
	03 = 1/4"	4 = 3/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 03 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	5/64 (1.9)	1/16 (1.5)	25	0.12 (0.10)	0.07 (0.06)	0	218 (15)	218 (15)	8	14	30	C - SOL20
02F 03 4 02 _ 0 N			5/64 (1.9)	5/64 (2)	37	0.12 (0.10)	0.12 (0.10)	0	218 (15)	218 (15)	14	21	30	D - SOL20
02F 03 4 25 _ 0 N			5/64 (1.9)	3/32 (2.5)	37	0.12 (0.10)	0.17 (0.15)	0	218 (15)	218 (15)	22	31	36	E - SOL21
02F 03 4 03 _ 0 N			5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10)	218 (15)	8	14	30	C - SOL20
02F 03 4 04 _ 0 N			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	218 (15)	218 (15)	14	21	30	D - SOL20
02F 03 4 05 _ 0 N			5/64 (1.9)	13/64 (5)	37	0.12 (0.10)	0.59 (0.51)	0	218 (15)	218 (15)	22	31	36	E - SOL21
									58 (4)	145 (10)	8	14	30	C - SOL20
									102 (7)	218 (15)	14	21	30	D - SOL20
									189 (13)	218 (15)	22	31	36	E - SOL21
									29 (2)	87 (6)	8	14	30	C - SOL20
									44 (3)	138 (9.5)	14	21	30	D - SOL20
									116 (8)	174 (12)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



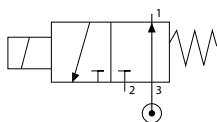
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

Series 02F

DIRECT ACTING SOLENOID VALVES WITH BRASS BODY

3/2 NO

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW614N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils, Air, Inert gases, Vacuum
- Food industry, Misting
- Car washes, Washing systems, Pressure washers
- Industrial processes, Automation, Refrigeration
- Machine tools, Laser cutting, Compressors
- Oxygen, Steam, Medical, Sterilizers
- Chemical and Petrochemical industry, Hi-Tech



Ordering codes

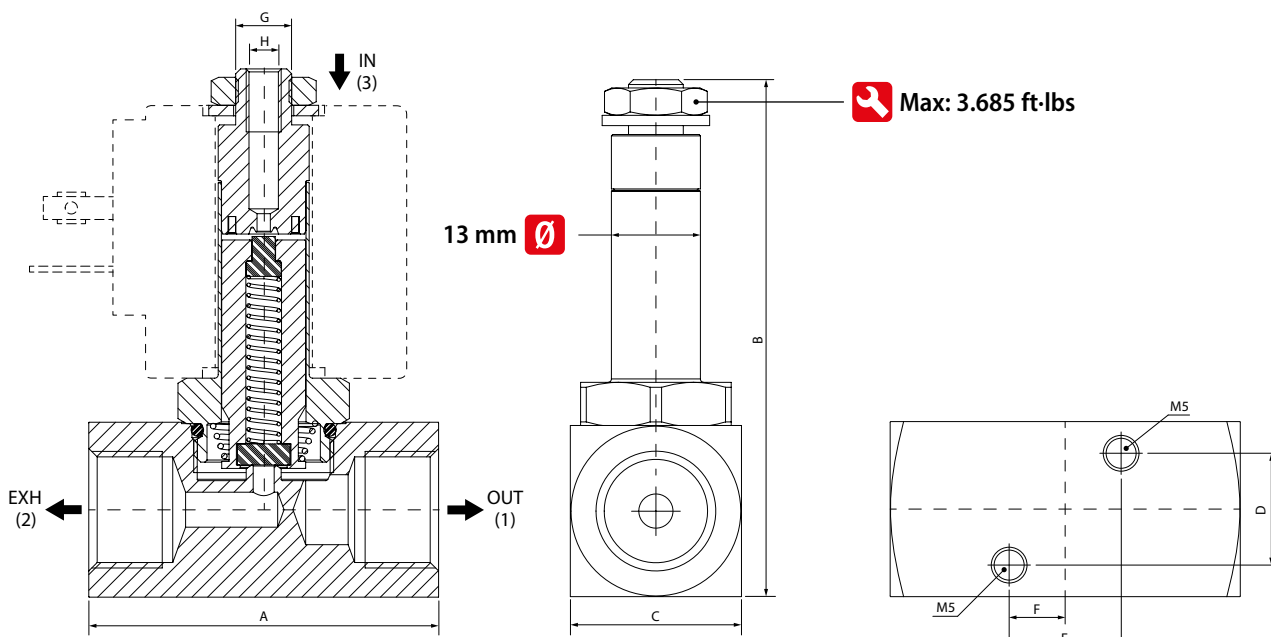
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 2 F	0 4	4	0 3	N	0	N	C	A
	04 = 3/8"	4 = 3/2 NO	03 = 1/8 (3)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20	A = 12V DC
	05 = 1/2"		04 = 5/32 (4)	E = EPDM			D = D series - SOL20	B = 24V DC
			05 = 13/64 (5)	V = FKM			E = E series - SOL21	1 = 24V AC
								2 = 110V AC
								3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
02F 04 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	3/8"	5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10) 218 (15) 218 (15)	218 (15)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21
02F 04 4 02 _ 0 N			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	58 (4) 102 (7) 189 (13)	145 (10) 218 (15) 218 (15)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21
02F 04 4 25 _ 0 N			5/64 (1.9)	13/64 (5)	37	0.12 (0.10)	0.59 (0.51)	0	29 (2) 44 (3) 116 (8)	87 (6) 138 (9.5) 174 (12)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21
02F 05 4 03 _ 0 N		1/2"	5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10) 218 (15) 218 (15)	218 (15)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21
02F 05 4 04 _ 0 N			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	58 (4) 102 (7) 189 (13)	145 (10) 218 (15) 218 (15)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21
02F 05 4 05 _ 0 N			5/64 (1.9)	13/64 (5)	37	0.12 (0.10)	0.59 (0.51)	0	29 (2) 44 (3) 116 (8)	87 (6) 138 (9.5) 174 (12)	8 14 22	14 21 31	30 30 36	C - SOL20 D - SOL20 E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

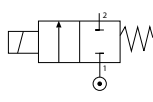
Coil not included



Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
3/8"	1.968 (50)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5
1/2"	2.283 (58)	2.972 (75.5)	0.984 (25)	0.629 (16)	0.629 (16)	0.314 (8)	M8 x 1	M5



2/2 NC



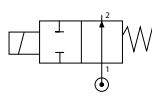
1/4"

Page 5.2

Ex



2/2 NO



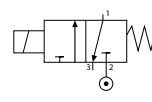
1/4"

Page 5.4

Ex



3/2 NC



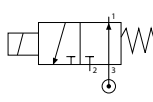
1/4"

Page 5.6

Ex



3/2 NO



1/4"

Page 5.8

Ex



30 mm

Series C

Page 11.4

UL US
CSA C22.2



30 mm

Series D

Page 11.5

UL US
CSA C22.2



36 mm

Series E

Page 11.6

UL US
CSA C22.2



Connectors

Page 11.7

UL US
CSA C22.2

DIRECT ACTING SOLENOID VALVES IN STAINLESS STEEL 316L

AISI 316L

Ex
II 2 G/D Ex h

UL **US**
CSA C22.2



Series X2F

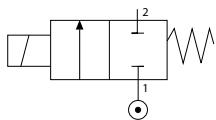
X2F

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NC

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 2 F	0 3	1	1 5	N	0	N	C	A
	03 = 1/4"	1 = 2/2 NC	15 = 1/16 (1.5)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20	A = 12V DC
			02 = 5/64 (2)	F = NBR 			D = D series - SOL20	B = 24V DC
			25 = 3/32 (2.5)	E = EPDM			E = E series - SOL21	1 = 24V AC
			03 = 1/8 (3)	V = FKM				2 = 110V AC
			04 = 5/32 (4)	P = PTFE				3 = 220V AC
			05 = 13/64 (5)					
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

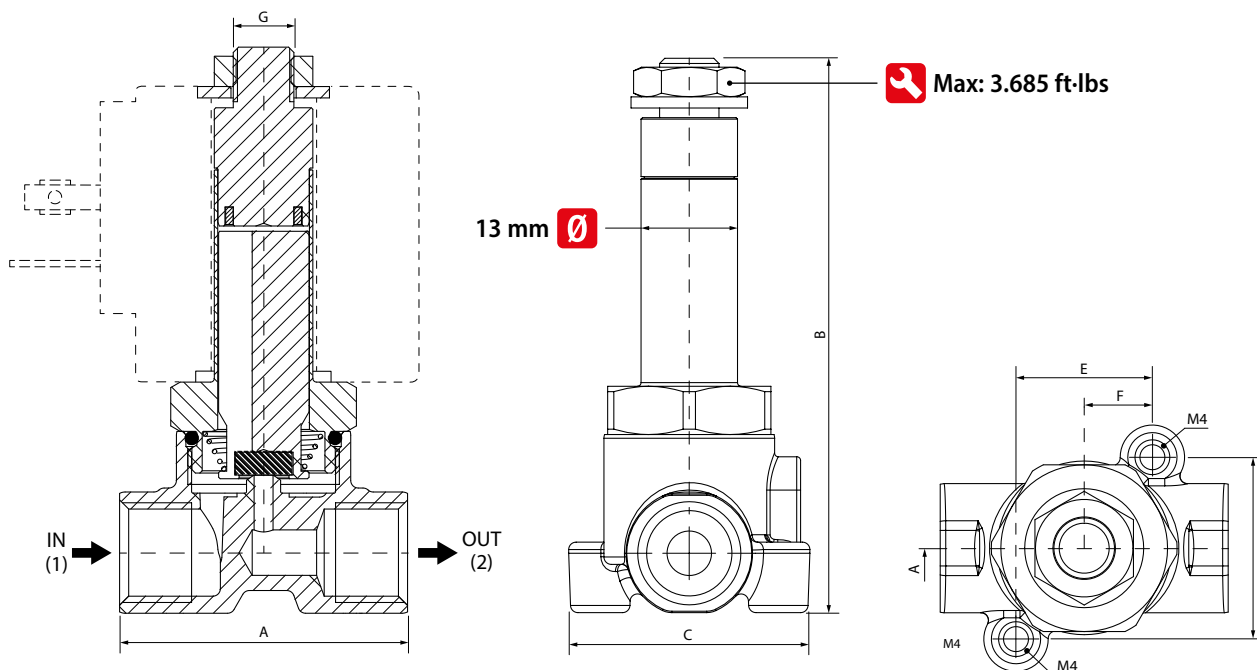
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series C - Page 11.4 D - Page 11.5 E - Page 11.6
						Min	Max DC	Max AC	W	VA	mm	
①	①	NPTF	inch (mm)	cSt	gpm (m ³ /h)							
X2F 03 1 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) F = NBR -40°F +194°F (-40°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) P = PTFE -40°F +356°F (-40°C +180°C)	1/4"	1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)	8	14	30	C - SOL20
X2F 03 1 02 _ 0 N			5/64 (2)	37	0.12 (0.10)	0	725 (50)	725 (50)	14	21	30	D - SOL20
X2F 03 1 25 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	725 (50)	725 (50)	22	31	36	E - SOL21
X2F 03 1 03 _ 0 N			1/8 (3)	53	0.24 (0.21)	0	508 (35)	725 (50)	8	14	30	C - SOL20
X2F 03 1 04 _ 0 N			5/32 (4)	53	0.41 (0.35)	0	725 (50)	725 (50)	14	21	30	D - SOL20
X2F 03 1 05 _ 0 N			13/64 (5)	53	0.59 (0.51)	0	305 (21)	508 (35)	22	31	36	E - SOL21
							435 (30)	580 (40)	8	14	30	C - SOL20
							653 (45)	725 (50)	14	21	30	D - SOL20
							145 (10)	305 (21)	22	31	36	E - SOL21
							232 (16)	435 (30)	8	14	30	C - SOL20
							580 (40)	580 (40)	14	21	30	D - SOL20
							44 (3)	145 (10)	22	31	36	E - SOL21
							87 (6)	203 (14)	8	14	30	C - SOL20
							218 (15)	290 (20)	14	21	30	D - SOL20
							20 (1.4)	73 (5)	22	31	36	E - SOL21
							32 (2.2)	102 (7)	8	14	30	C - SOL20
							80 (5.5)	145 (10)	14	21	30	D - SOL20
									22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE - P max = 145 psi (10 bar)

Allowable leakage: PTFE = max 0.08 gph (300 cm³/h)

Coil not included



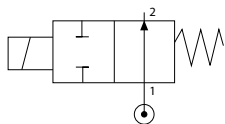
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

2/2 NO

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



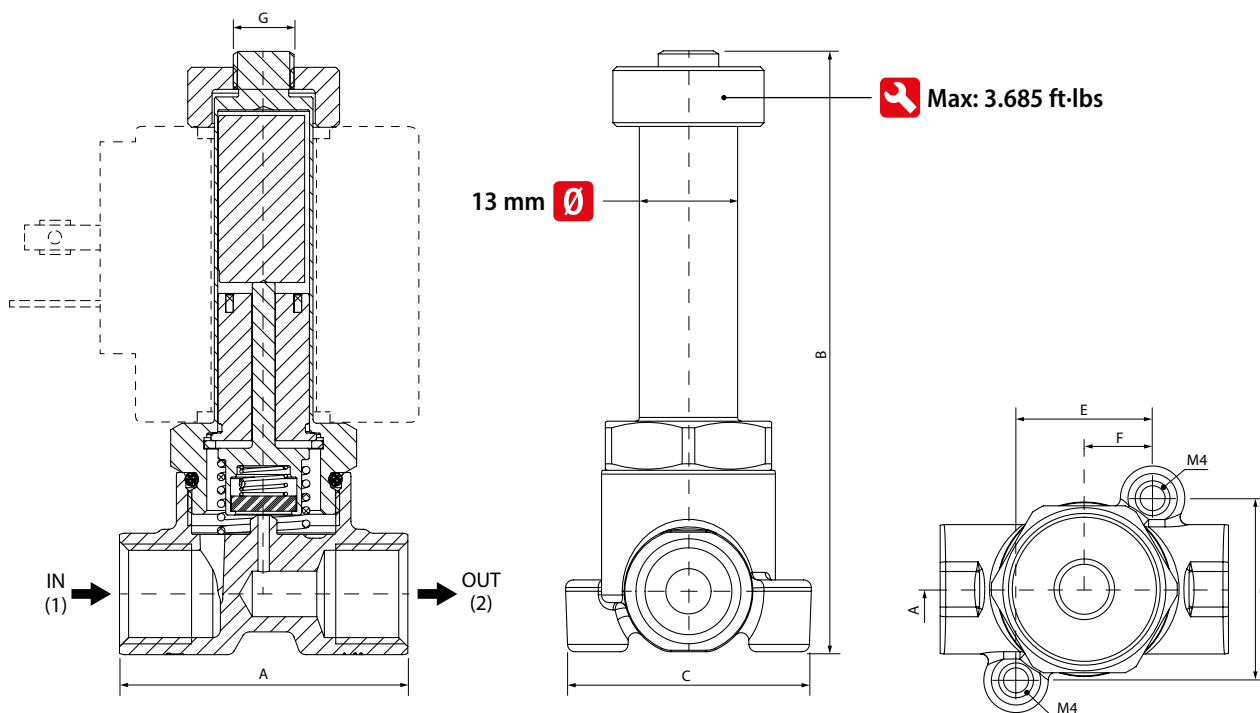
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 2 F	0 3	2	1 5	N	0	N	C	A
	03 = 1/4"	2 = 2/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC W	AC VA	Size mm	Series C - Page 11.4 D - Page 11.5 E - Page 11.6
						Min	Max DC	Max AC				
X2F 03 2 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	NPTF	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)	-	14	30	C - SOL20
X2F 03 2 02 _ 0 N			5/64 (2)	37	0.12 (0.10)	0	363 (25)	363 (25)	14	21	30	D - SOL20
X2F 03 2 25 _ 0 N							363 (25)	363 (25)	22	31	36	E - SOL21
X2F 03 2 03 _ 0 N			3/32 (2.5)	53	0.17 (0.15)	0	-	261 (18)	-	14	30	C - SOL20
X2F 03 2 04 _ 0 N							261 (18)	261 (18)	14	21	30	D - SOL20
X2F 03 2 05 _ 0 N			1/8 (3)	53	0.24 (0.21)	0	261 (18)	261 (18)	22	31	36	E - SOL21
							-	174 (12)	-	14	30	C - SOL20
			5/32 (4)	53	0.41 (0.35)	0	174 (12)	174 (12)	14	21	30	D - SOL20
							174 (12)	174 (12)	22	31	36	E - SOL21
			13/64 (5)	53	0.59 (0.51)	0	-	109 (7.5)	-	14	30	C - SOL20
							109 (7.5)	109 (7.5)	14	21	30	D - SOL20
							109 (7.5)	109 (7.5)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



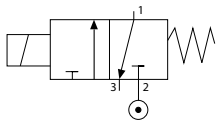
Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
1/4"	1.496 (38)	3.129 (79.5)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NC

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H -  - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Ordering codes

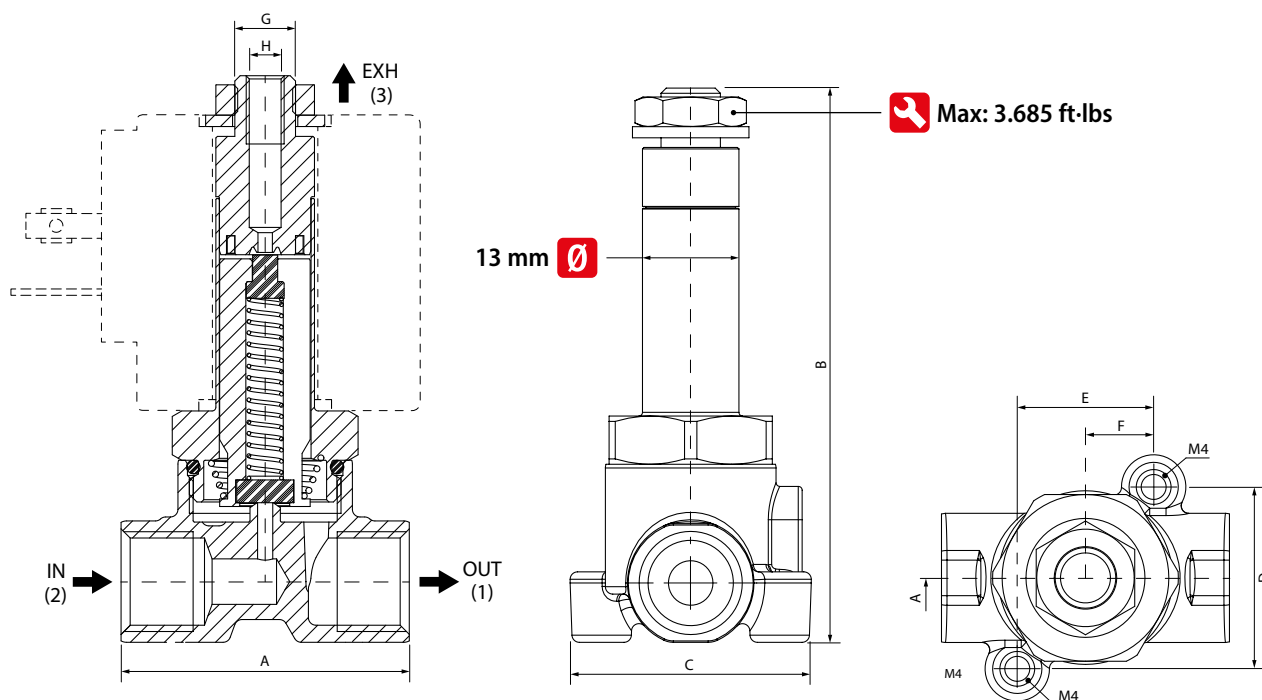
Series	Port size	Functions	Orifice <i>inch (mm)</i>	Sealing materials	Version	Thread	Suitable coils	
X 2 F	0 3	3	1 5	N	0	N	C	A
	03 = 1/4"	3 = 3/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)		
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)		
			IN	EXH		IN	EXH	Min	Max DC	Max AC
X2F 03 3 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	1/16 (1.5)	5/64 (1.9)	25	0.07 (0.06)	0.12 (0.10)	0	363 (25) 363 (25) 363 (25)	363 (25) 363 (25) 363 (25)
X2F 03 3 02 _ 0 N			5/64 (2)	5/64 (1.9)	37	0.12 (0.10)	0.12 (0.10)	0	261 (18) 261 (18) 261 (18)	261 (18) 261 (18) 261 (18)
X2F 03 3 25 _ 0 N			3/32 (2.5)	5/64 (1.9)	37	0.17 (0.15)	0.12 (0.10)	0	189 (13) 189 (13) 189 (13)	189 (13) 189 (13) 189 (13)
X2F 03 3 03 _ 0 N			1/8 (3)	5/64 (1.9)	37	0.24 (0.21)	0.12 (0.10)	0	145 (10) 145 (10) 145 (10)	145 (10) 145 (10) 145 (10)
X2F 03 3 04 _ 0 N			5/32 (4)	5/64 (1.9)	37	0.41 (0.35)	0.12 (0.10)	0	87 (6) 87 (6) 87 (6)	87 (6) 87 (6) 87 (6)
X2F 03 3 05 _ 0 N			13/64 (5)	5/64 (1.9)	37	0.59 (0.51)	0.12 (0.10)	0	44 (3) 44 (3) 44 (3)	44 (3) 44 (3) 44 (3)

① Select seal material

With steam: **EPDM - $P_{max} = 36 \text{ psi (2.5 bar)}$**

Coil not included



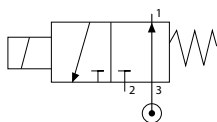
Size	A <i>inch (mm)</i>	B <i>inch (mm)</i>	C <i>inch (mm)</i>	D <i>inch (mm)</i>	E <i>inch (mm)</i>	F <i>inch (mm)</i>	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5

Series X2F

DIRECT ACTING SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

3/2 NO

1/4"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X1F

- Universal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Chemical and Petrochemical Industry
- Oil & Gas
- Oxygen and Hydrogen



Silver-plated shading ring on request



Ordering codes

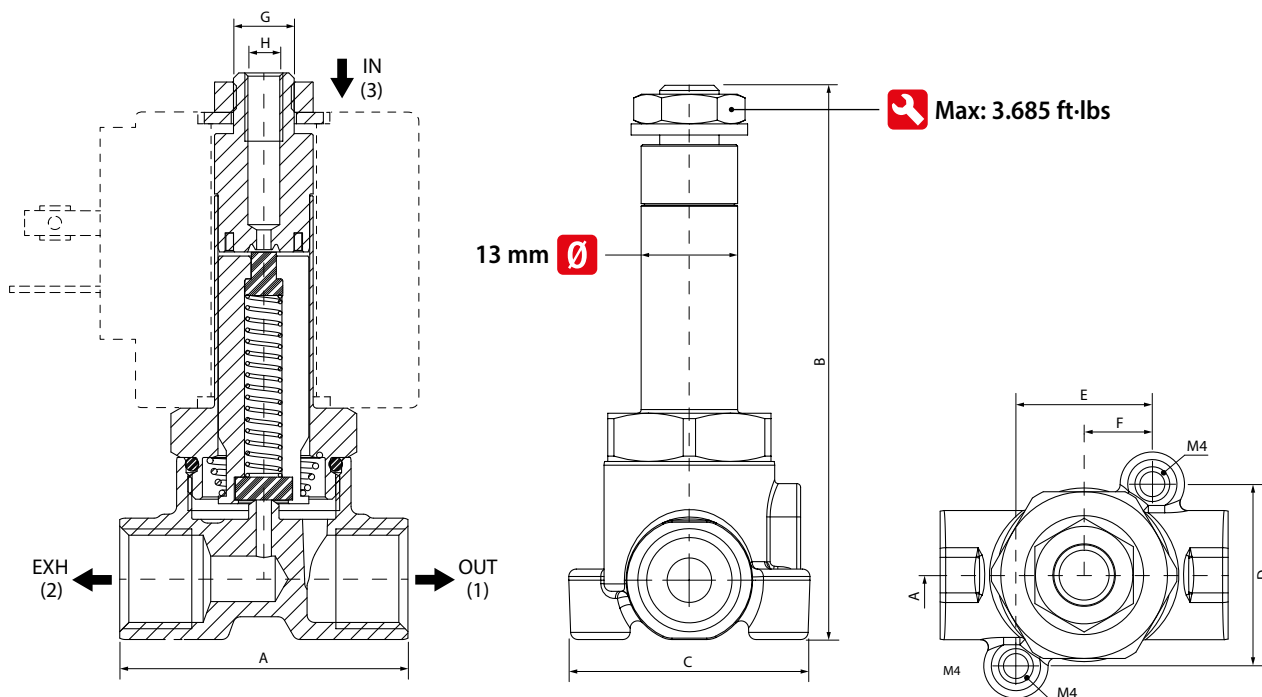
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 2 F	0 3	4	1 5	N	0	N	C	A
	03 = 1/4"	4 = 3/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4) 05 = 13/64 (5)	N = NBR E = EPDM V = FKM	0 = Standard	N = NPTF	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.								

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
X2F 03 4 15 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	5/64 (1.9)	1/16 (1.5)	25	0.12 (0.10)	0.07 (0.06)	0	218 (15)	218 (15)	8	14	30	C - SOL20
X2F 03 4 02 _ 0 N			5/64 (1.9)	5/64 (2)	37	0.12 (0.10)	0.12 (0.10)	0	218 (15)	218 (15)	14	21	30	D - SOL20
X2F 03 4 25 _ 0 N			5/64 (1.9)	3/32 (2.5)	37	0.12 (0.10)	0.17 (0.15)	0	218 (15)	218 (15)	22	31	36	E - SOL21
X2F 03 4 03 _ 0 N			5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	145 (10)	218 (15)	8	14	30	C - SOL20
X2F 03 4 04 _ 0 N			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	218 (15)	218 (15)	14	21	30	D - SOL20
X2F 03 4 05 _ 0 N			5/64 (1.9)	13/64 (5)	37	0.12 (0.10)	0.59 (0.51)	0	218 (15)	218 (15)	22	31	36	E - SOL21
									58 (4)	145 (10)	8	14	30	C - SOL20
									102 (7)	218 (15)	14	21	30	D - SOL20
									189 (13)	218 (15)	22	31	36	E - SOL21
									29 (2)	87 (6)	8	14	30	C - SOL20
									44 (3)	138 (9.5)	14	21	30	D - SOL20
									116 (8)	174 (12)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

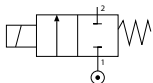
Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G	H
1/4"	1.496 (38)	2.940 (74.7)	1.279 (32.5)	0.944 (24)	0.708 (18)	0.354 (9)	M8 x 1	M5



2/2 NC



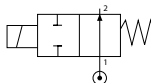
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Page 6.2

Ex



2/2 NO



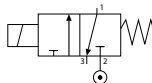
32 x 32 mm

Page 6.4

Ex



3/2 NC



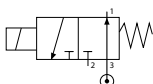
32 x 32 mm

Page 6.6

Ex



3/2 NO



32 x 32 mm

Page 6.8

Ex



30 mm

Series C

Page 11.4

UL US
CSA C22.2



30 mm

Series D

Page 11.5

UL US
CSA C22.2



36 mm

Series E

Page 11.6

UL US
CSA C22.2



Connectors

Page 11.7

UL US
CSA C22.2

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY - $P_b \leq 0.1\%$

CW510L / $P_b \leq 0.1\%$

Ex
II 2 G/D Ex h

C **UL** **US**
CSA C22.2



Series F2F

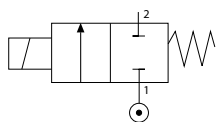
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NC

32 x 32 mm

**CW510L
Pb ≤ 0.1%**



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - NBR - EPDM - FKM - PTFE - RUBY
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 2 F	J 9 J9 = □ 32x32 mm	1 1 = 2/2 NC	1 5 15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N N = NBR F = NBR E = EPDM V = FKM P = PTFE R = RUBY	0 0 = Standard 3 = Stainless Steel seat (on request)	C C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC

Valves and coils are supplied separately.
Upon commercial agreements can be
supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
			inch (mm)	cSt	gpm (m ³ /h)	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
F2F J9 1 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	□ 32x32 mm	1/16 (1.5)	25	0.07 (0.06)	0	725 (50)	725 (50)	8	14	30	C - SOL20
							725 (50)	725 (50)	14	21	30	D - SOL20
							725 (50)	725 (50)	22	31	36	E - SOL21
F2F J9 1 02 _ 0	F = NBR ❄️ -40°F +194°F (-40°C +90°C)		5/64 (2)	37	0.12 (0.10)	0	508 (35)	725 (50)	8	14	30	C - SOL20
							725 (50)	725 (50)	14	21	30	D - SOL20
							725 (50)	725 (50)	22	31	36	E - SOL21
F2F J9 1 25 _ 0	V = FKM +14°F +284°F (-10°C +140°C)		3/32 (2.5)	53	0.17 (0.15)	0	305 (21)	508 (35)	8	14	30	C - SOL20
							435 (30)	580 (40)	14	21	30	D - SOL20
							653 (45)	725 (50)	22	31	36	E - SOL21
F2F J9 1 03 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)		1/8 (3)	53	0.24 (0.21)	0	145 (10)	305 (21)	8	14	30	C - SOL20
							232 (16)	435 (30)	14	21	30	D - SOL20
							580 (40)	580 (40)	22	31	36	E - SOL21
F2F J9 1 04 _ 0	P = PTFE -40°F +356°F (-40°C +180°C)		5/32 (4)	53	0.41 (0.35)	0	44 (3)	145 (10)	8	14	30	C - SOL20
							87 (6)	203 (14)	14	21	30	D - SOL20
							218 (15)	290 (20)	22	31	36	E - SOL21
	R = RUBY * -40°F +356°F (-40°C +180°C)											

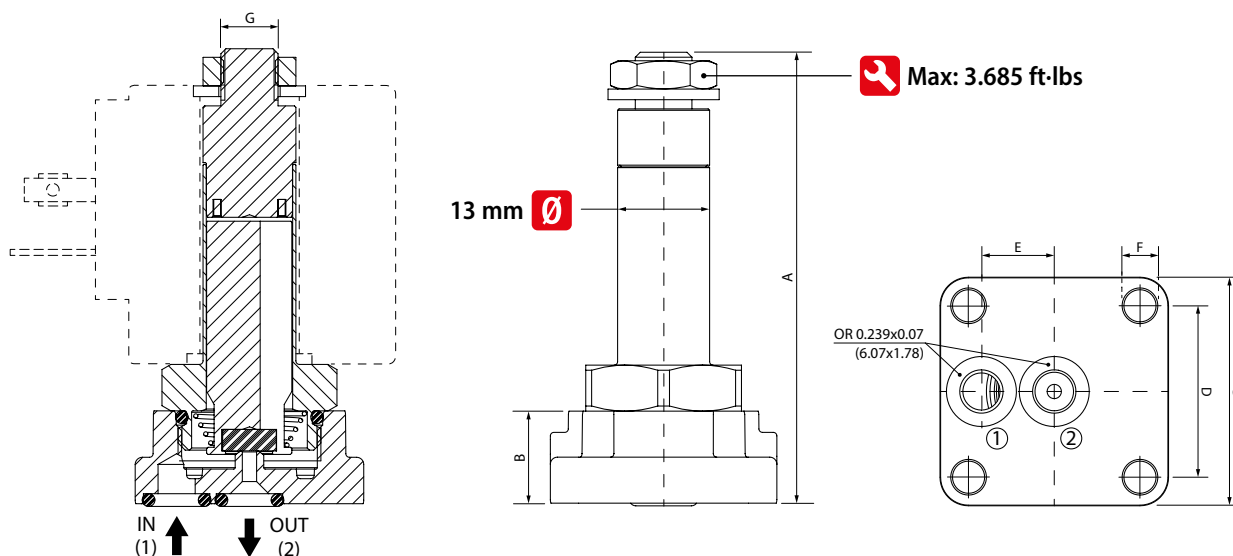
① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / PTFE & RUBY - P max = 145 psi (10 bar)

Allowable leakage: PTFE & RUBY = max 0.08 gph (300 cm³/h)

* RUBY - orifice max Ø 3/32" (2.5 mm): Only with stainless steel seat

Coil not included



Size	A	B	C	D	E	F	G
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	
□ 32x32 mm	2.507 (63.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1

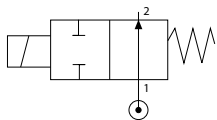
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

2/2 NO

32 x 32 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Stainless Steel armature tube on request



Ordering codes

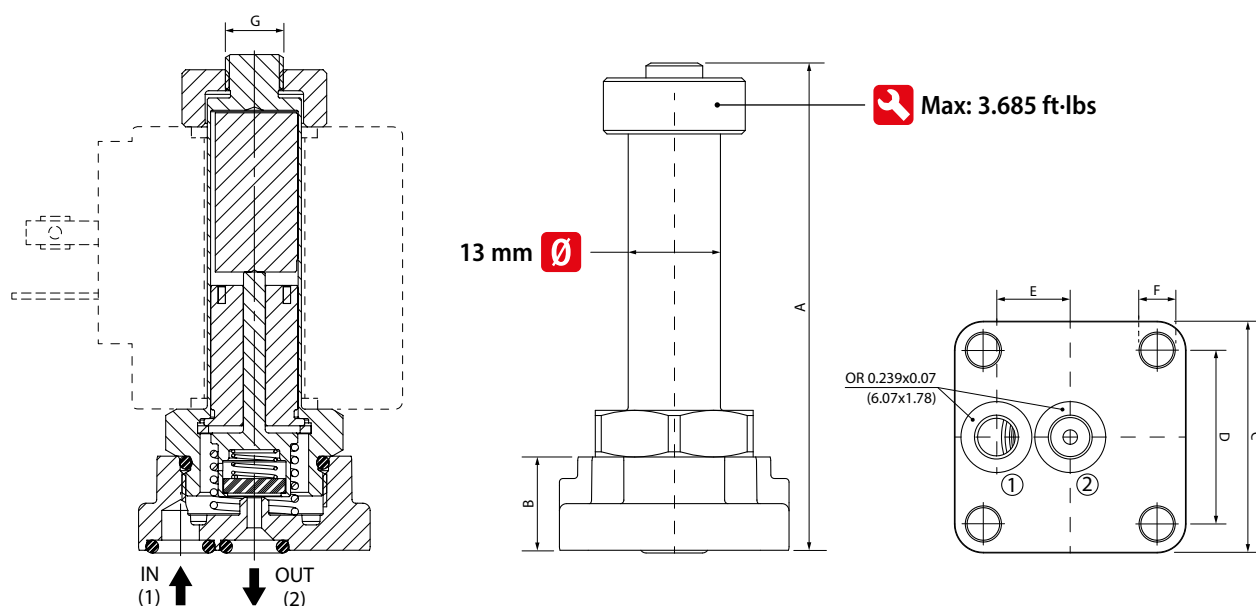
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 2 F	J 9	2	1 5	N	0	C	A
	J9 = □32x32 mm	2 = 2/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM	0 = Standard	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.							

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
			inch (mm)	cSt	gpm (m ³ /h)	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
F2F J9 2 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C)	 32x32 mm	1/16 (1.5)	25	0.07 (0.06)	0	-	363 (25)	-	14	30	C - SOL20
							363 (25)	363 (25)	14	21	30	D - SOL20
							363 (25)	363 (25)	22	31	36	E - SOL21
F2F J9 2 02 _ 0			5/64 (2)	37	0.12 (0.10)	0	-	261 (18)	-	14	30	C - SOL20
							261 (18)	261 (18)	14	21	30	D - SOL20
							261 (18)	261 (18)	22	31	36	E - SOL21
F2F J9 2 25 _ 0	V = FKM +14°F +284°F (-10°C +140°C)	 32x32 mm	3/32 (2.5)	53	0.17 (0.15)	0	-	174 (12)	-	14	30	C - SOL20
							174 (12)	174 (12)	14	21	30	D - SOL20
							174 (12)	174 (12)	22	31	36	E - SOL21
F2F J9 2 03 _ 0			1/8 (3)	53	0.24 (0.21)	0	-	109 (7.5)	-	14	30	C - SOL20
							109 (7.5)	109 (7.5)	14	21	30	D - SOL20
							109 (7.5)	109 (7.5)	22	31	36	E - SOL21
F2F J9 2 04 _ 0	E = EPDM +14°F +284°F (-10°C +140°C)	 32x32 mm	5/32 (4)	53	0.41 (0.35)	0	-	65 (4.5)	-	14	30	C - SOL20
							65 (4.5)	65 (4.5)	14	21	30	D - SOL20
							65 (4.5)	65 (4.5)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)	E inch (mm)	F inch (mm)	G
32x32 mm	2.696 (68.5)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1

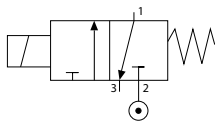
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NC

32 x 32 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM - RUBY
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 2 F	J 9	3	1 5	N	0	C	A
	J9 = □ 32x32 mm	3 = 3/2 NC	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM R = RUBY	0 = Standard 3 = Stainless Steel seat (on request)	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.							

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①		inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
F2F J9 3 15 _ 0	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C) R = RUBY * -40°F +356°F (-40°C +180°C)	□ 32x32 mm	1/16 (1.5)	3/32 (2.3)	25	0.07 (0.06)	0.15 (0.13)	0	363 (25)	363 (25)	8	14	30	C - SOL20
F2F J9 3 02 _ 0			5/64 (2)	3/32 (2.3)	37	0.12 (0.10)	0.15 (0.13)	0	363 (25)	363 (25)	14	21	30	D - SOL20
F2F J9 3 25 _ 0			3/32 (2.5)	3/32 (2.3)	37	0.17 (0.15)	0.15 (0.13)	0	363 (25)	363 (25)	22	31	36	E - SOL21
F2F J9 3 03 _ 0			1/8 (3)	3/32 (2.3)	37	0.24 (0.21)	0.15 (0.13)	0	261 (18)	261 (18)	8	14	30	C - SOL20
F2F J9 3 04 _ 0			5/32 (4)	3/32 (2.3)	37	0.41 (0.35)	0.15 (0.13)	0	261 (18)	261 (18)	14	21	30	D - SOL20
									261 (18)	261 (18)	22	31	36	E - SOL21
									189 (13)	189 (13)	8	14	30	C - SOL20
									189 (13)	189 (13)	14	21	30	D - SOL20
									189 (13)	189 (13)	22	31	36	E - SOL21
									145 (10)	145 (10)	8	14	30	C - SOL20
									145 (10)	145 (10)	14	21	30	D - SOL20
									145 (10)	145 (10)	22	31	36	E - SOL21
									87 (6)	87 (6)	8	14	30	C - SOL20
									87 (6)	87 (6)	14	21	30	D - SOL20
									87 (6)	87 (6)	22	31	36	E - SOL21

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar) / RUBY - P max = 145 psi (10 bar)

Allowable leakage: RUBY = max 0.08 gph (300 cm³/h)

* RUBY - orifice max Ø 3/32" (2.5 mm): Only with stainless steel seat

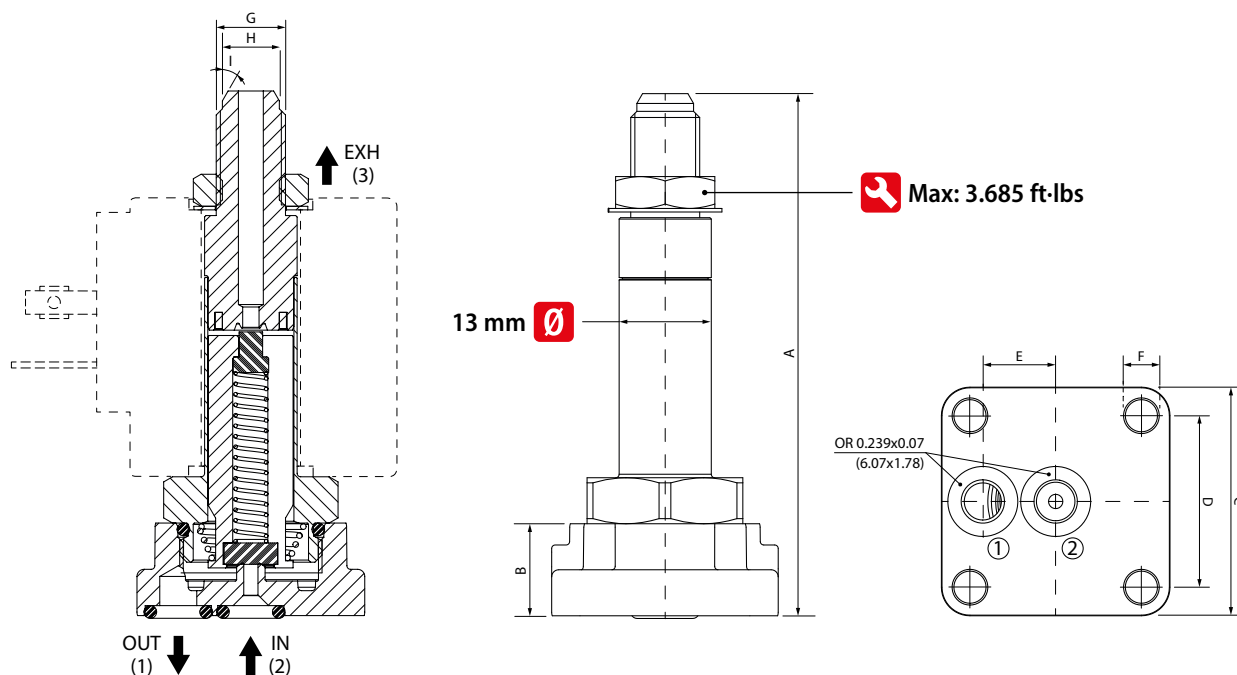
Performance with Ruby:

Ø orifice 1/16" (1.5 mm) = 218 psi (15 bar)

Ø orifice 5/64" (2 mm) = 145 psi (10 bar)

Ø orifice 3/32" (2.5 mm) = 87 psi (6 bar)

Coil not included



Size	A	B	C	D	E	F	G	H	I
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)			
□ 32x32 mm	2.901 (73.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	1/8"	Ø 8	30°

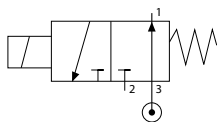
Series F2F

DIRECT ACTING SOLENOID VALVES WITH FLANGE FIXING AND BRASS CW510L BODY

3/2 NO

32 x 32 mm

CW510L
Pb ≤ 0.1%



Component Parts and Materials

- 1 Body: Brass CW510L - Pb ≤ 0.1%
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - F2F

- Universal mounting position
- Operator kit Ø 13 mm
- Valve certification: ATEX II 2G/D Ex h
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

725 psi (50 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Food industry
- Coffee & vending
- Compressors
- Water and Neutral liquids
- Air and Inert gases
- Oils, Steam, Vacuum



Ordering codes

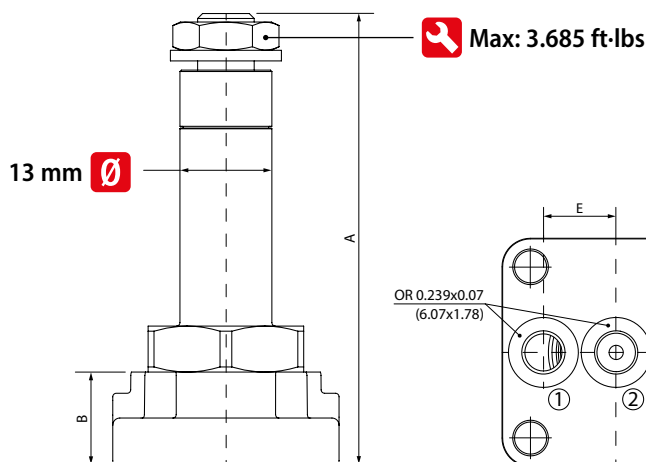
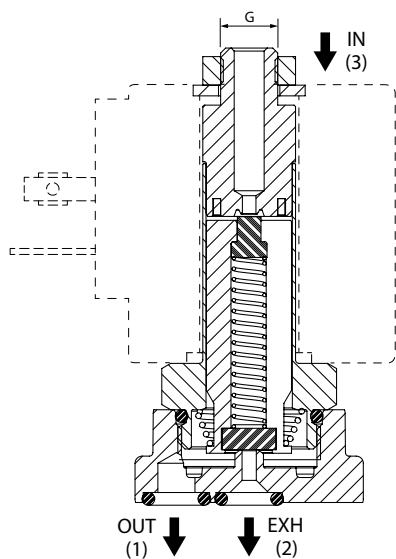
Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Suitable coils	
F 2 F	J 9	4	1 5	N	0	C	A
	J9 = □32x32 mm	4 = 3/2 NO	15 = 1/16 (1.5) 02 = 5/64 (2) 25 = 3/32 (2.5) 03 = 1/8 (3) 04 = 5/32 (4)	N = NBR E = EPDM V = FKM	0 = Standard	C = C series - SOL20 D = D series - SOL20 E = E series - SOL21	A = 12V DC B = 24V DC 1 = 24V AC 2 = 110V AC 3 = 220V AC
Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.							

Code	Sealing materials	Port size	Ø Orifice		Viscosity	Cv (Kv)		Differential pressure (OPD)			Power		Coils	
①	①		inch (mm)		cSt	gpm (m³/h)		psi (bar)			DC	AC	Size	Series
			IN	EXH		IN	EXH	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
F2F J9 4 15 _ 0	N = NBR -10°C +90°C	32x32 mm	5/64 (1.9)	1/16 (1.5)	25	0.12 (0.10)	0.07 (0.06)	0	218 (15)	218 (15)	8	14	30	C - SOL20
F2F J9 4 02 _ 0			5/64 (1.9)	5/64 (2)	37	0.12 (0.10)	0.12 (0.10)	0	218 (15)	218 (15)	14	21	30	D - SOL20
F2F J9 4 25 _ 0			5/64 (1.9)	3/32 (2.5)	37	0.12 (0.10)	0.17 (0.15)	0	218 (15)	218 (15)	22	31	36	E - SOL21
F2F J9 4 03 _ 0			5/64 (1.9)	1/8 (3)	37	0.12 (0.10)	0.24 (0.21)	0	218 (15)	218 (15)	8	14	30	C - SOL20
F2F J9 4 04 _ 0			5/64 (1.9)	5/32 (4)	37	0.12 (0.10)	0.41 (0.35)	0	218 (15)	218 (15)	14	21	30	D - SOL20
									218 (15)	218 (15)	22	31	36	E - SOL21
									145 (10)	218 (15)	8	14	30	C - SOL20
									218 (15)	218 (15)	14	21	30	D - SOL20
									218 (15)	218 (15)	22	31	36	E - SOL21
									58 (4)	145 (10)	8	14	30	C - SOL20
									102 (7)	218 (15)	14	21	30	D - SOL20
									189 (13)	218 (15)	22	31	36	E - SOL21

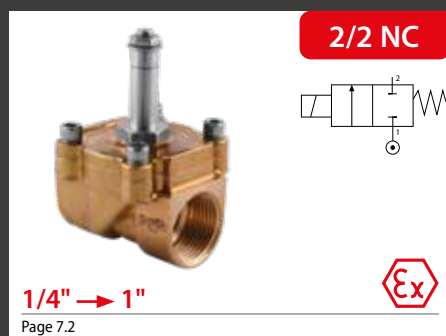
① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A	B	C	D	E	F	G	H
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		
32x32 mm	2.507 (63.7)	0.511 (13)	1.259 (32)	0.944 (24)	0.401 (10.2)	0.177 (4.5)	M8 x 1	M5



Series 03F

Coils & Connectors



GUIDED DIAPHRAGM SOLENOID VALVES WITH BRASS BODY



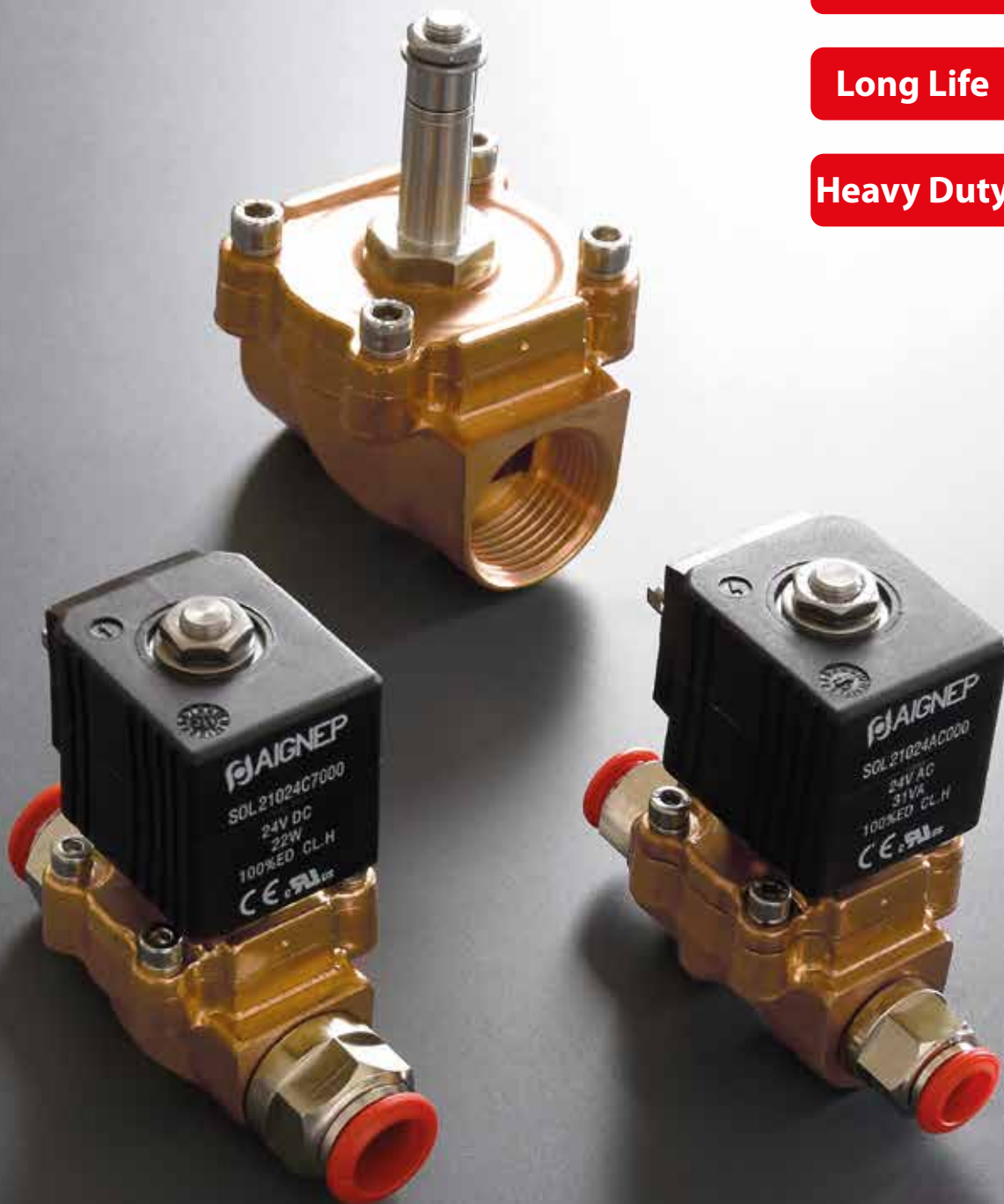
II 2 G/D Ex h

C  US
CSA C22.2

$\Delta P = 0$ psi

Long Life

Heavy Duty



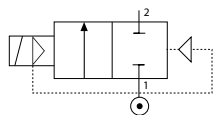
Series 03F

Series 03F

GUIDED DIAPHRAGM SOLENOID VALVES - $\Delta P = 0$ psi
(complete diaphragm opening $\Delta P > 0$ psi)

2/2 NC

1/4" → 1"


 $\Delta P = 0$ psi

Long Life

Heavy Duty



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 02F

- Recommended horizontal mounting position
- Operator kit Ø 13 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F	+176°F
-10°C	+80°C



Applications

- Water, Neutral liquids, Oils
- Car washes, Washing systems
- Industrial processes, Tank draining
- Air and Inert gases
- Vacuum, Packaging
- Oxygen, Steam, Medical, Sterilizers



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
0 3 F	0 3	1	1 0	N	0	N	C	A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	0 = Standard	N = NPTF	C = C series - SOL20	A = 12V DC
	04 = 3/8"		12 = 15/32 (12)	E = EPDM			D = D series - SOL20	B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM			E = E series - SOL21	1 = 24V AC
	07 = 3/4"		25 = 1 (25)					2 = 110V AC
	09 = 1"							3 = 220V AC

Valves and coils are supplied separately.
Upon commercial agreements can be supplied assembled.

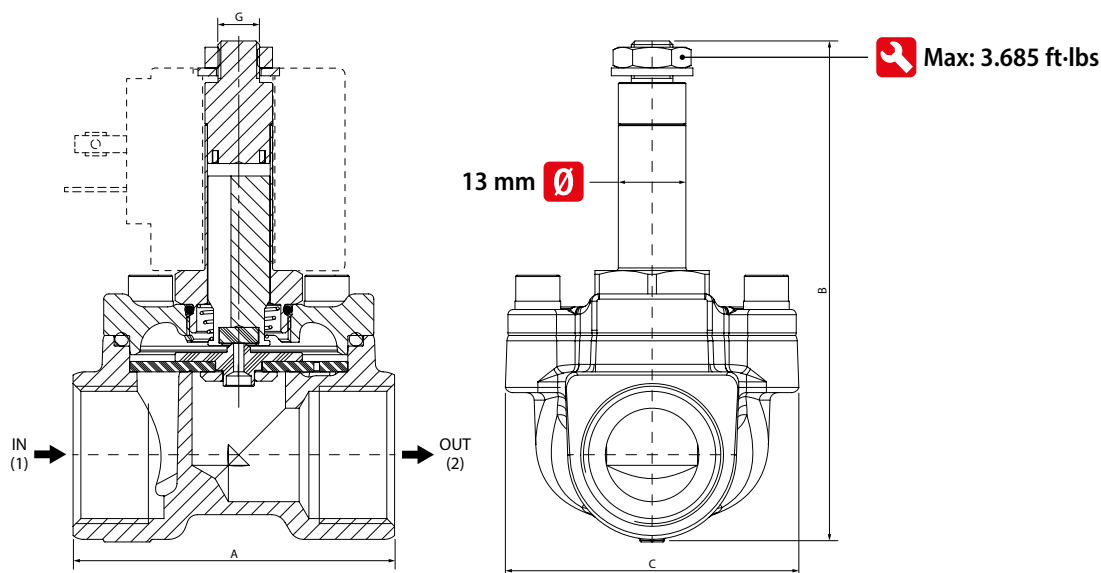
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		
①	①	NPTF	inch (mm)	cSt	gpm (m³/h)	psi (bar)		
						Min	Max DC	Max AC
03F 03 1 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/4"	25/64 (10)	25	1.84 (1.58)	0	-	261 (18)
							87 (6)	290 (20)
							232 (16)	363 (25)
03F 04 1 12 _ 0 N		3/8"	15/32 (12)	25	2.73 (2.34)	0	-	261 (18)
							87 (6)	290 (20)
							232 (16)	363 (25)
03F 05 1 12 _ 0 N		1/2"	15/32 (12)	25	2.75 (2.36)	0	-	261 (18)
							87 (6)	290 (20)
							232 (16)	363 (25)
03F 07 1 18 _ 0 N		3/4"	45/64 (18)	25	4.75 (4.08)	0	-	261 (18)
							87 (6)	290 (20)
							232 (16)	363 (25)
03F 09 1 25 _ 0 N	1"	1 (25)	25	7.72 (6.63)	0	-	232 (16)	
						58 (4)	290 (20)	
						174 (12)	363 (25)	

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21
-	14	30	C - SOL20
14	21	30	D - SOL20
22	31	36	E - SOL21

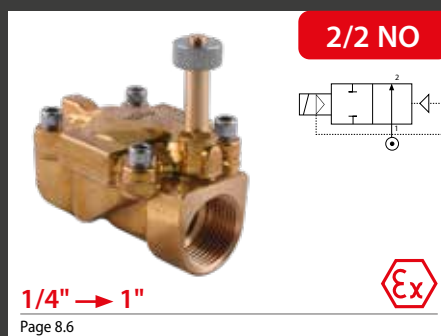
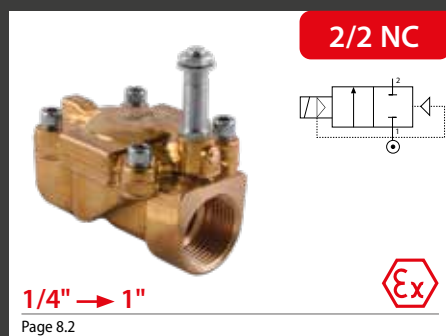
① Select seal material

With steam: **EPDM - P max = 36 psi (2.5 bar)**

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	1.732 (44)	3.307 (84)	1.574 (40)	M8 x 1
3/8"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
1/2"	2.047 (52)	3.582 (91)	1.830 (46.5)	M8 x 1
3/4"	2.440 (62)	3.799 (96.5)	2.224 (56.5)	M8 x 1
1"	2.854 (72.5)	4.133 (105)	2.598 (66)	M8 x 1



SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY



II 2 G/D Ex h

C  US
CSA C22.2



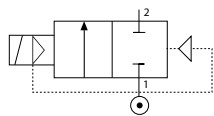
Series 04F

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils
0 4 F	0 3	1	1 0	N	*	N	A A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	* = Select the version	N = NPTF	A = A series - SOL10 A = 12V DC
	04 = 3/8"		12 = 15/32 (12)	E = EPDM			B = B series - SOL11 B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	2/2 NC → Page 8.3 / 8.4		1 = 24V AC
	07 = 3/4"		25 = 1 (25)				2 = 110V AC
	09 = 1"						3 = 220V AC
Ex: Version H → 04F 03 1 10 N H N Version 4 → 04F 07 1 18 N 4 N Version 0 → 04F 03 1 10 N 0 N Version 2 → 04F 07 1 18 N 2 N Version T → 04F 07 1 18 N T N Version 5 → 04F 07 1 18 N 5 N Version 1 → 04F 07 1 18 N 1 N Version 3 → 04F 07 1 18 N 3 N							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
①	①	NPTF	inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

Without manual override												
04F 03 1 10 _ H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 04 1 12 _ H N	V = FKM +14°F +284°F (-10°C +140°C)	3/8"	15/32 (12)	25	3.38 (2.90)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 05 1 12 _ H N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	15/32 (12)	25	3.53 (3.03)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 07 1 18 _ H N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ H N		1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

Without manual override and with reinforced and guided diaphragm												
04F 07 1 18 _ 4 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 4 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

With manual override												
04F 03 1 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 04 1 12 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	3/8"	15/32 (12)	25	3.38 (2.90)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 05 1 12 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1/2"	15/32 (12)	25	3.53 (3.03)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 07 1 18 _ 0 N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 0 N		1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

With manual override and with reinforced and guided diaphragm												
04F 07 1 18 _ 2 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 2 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



With speed regulator
Allow to adjust the opening
and closing diaphragm speed.

2/2 NC

1/4" → 1"

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
		NPTF	inch (mm)	cSt	gpm (m ³ /h)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

T

With speed regulator and without manual override

04F 07 1 18 _ T N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
	V = FKM +14°F +284°F (-10°C +140°C)						363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ T N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

5

With speed regulator, without manual override and with reinforced and guided diaphragm

04F 07 1 18 _ 5 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
	V = FKM +14°F +284°F (-10°C +140°C)						363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 5 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

1

With speed regulator and with manual override

04F 07 1 18 _ 1 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
	V = FKM +14°F +284°F (-10°C +140°C)						363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 1 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

3

With speed regulator, with manual override and with reinforced and guided diaphragm

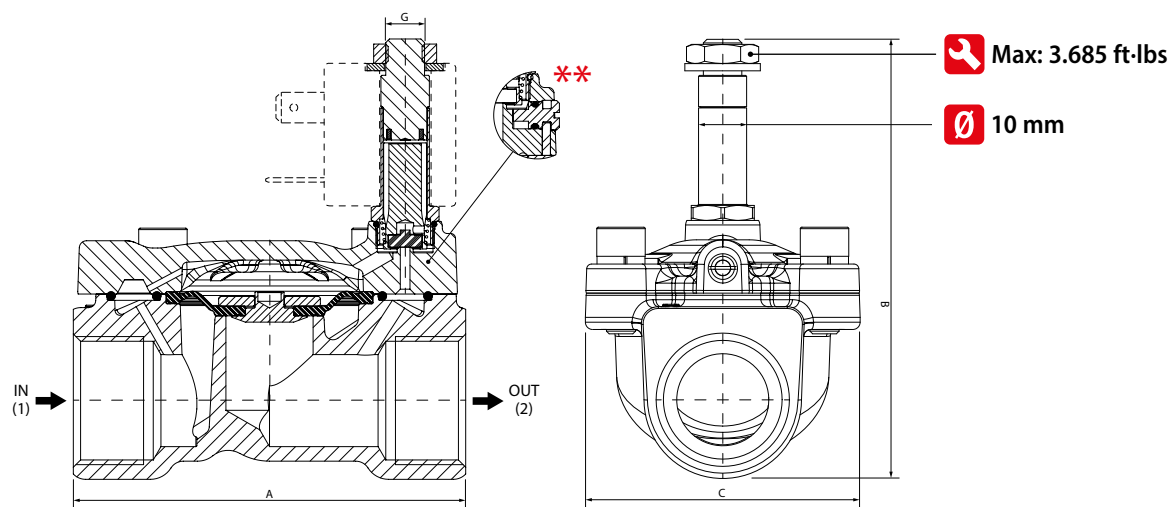
04F 07 1 18 _ 3 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
	V = FKM +14°F +284°F (-10°C +140°C)						363 (25)	363 (25)	8	11	30	B - SOL11
04F 09 1 25 _ 3 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

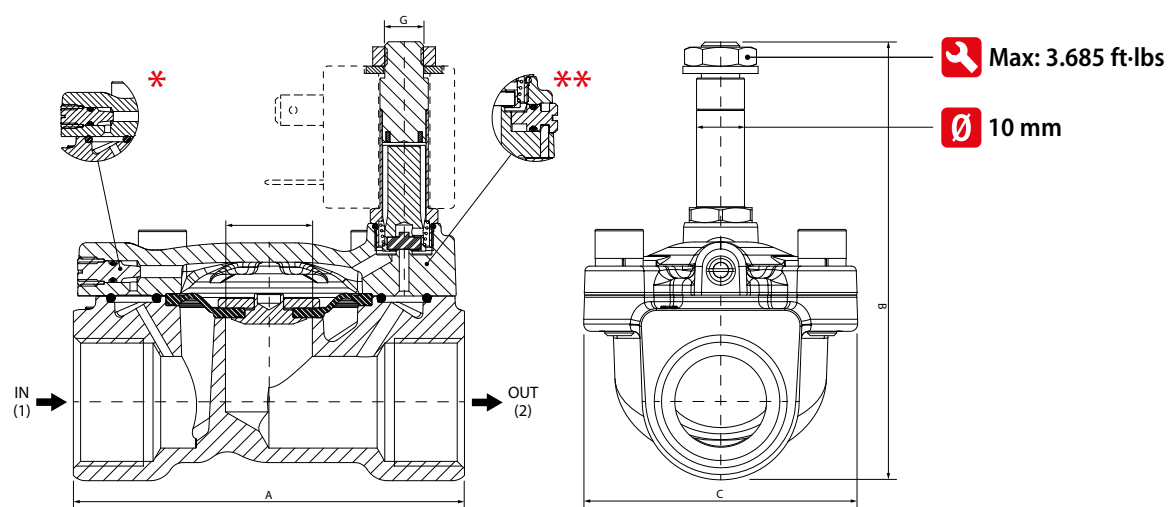
** Manual override



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

* Speed regulator

** Manual override



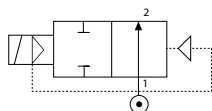
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

Series 04F

SERVO-ASSISTED SOLENOID VALVES WITH BRASS BODY

2/2 NO

1/4" → 1"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Brass
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



General features - 04F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Neutral liquids, Oils
- Water management, Water treatment
- Agriculture, Irrigation, Zootechnics
- Car washes, Washing systems
- Industrial processes, Refrigeration
- Air, Inert gases, Vacuum
- Oxygen, Steam



Stainless Steel armature tube on request



Ordering codes

Series	Port size	Functions	Orifice <i>inch (mm)</i>	Sealing materials	Version	Thread	Suitable coils	
0 4 F	0 3	2	1 0	N	*	N	A	A
	03 = 1/4"	2 = 2/2 NO	10 = 25/64 (10)	N = NBR	* = Select the version	N = NPTF	A = A series - SOL10	A = 12V DC
	04 = 3/8"		12 = 15/32 (12)	E = EPDM	↓		B = B series - SOL11	B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM	2/2 NO → Page 8.7 / 8.8			1 = 24V AC
	07 = 3/4"		25 = 1 (25)		↓			2 = 110V AC
	09 = 1"							3 = 220V AC
Ex: Version 0 → 04F 03 2 10 N 0 N							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	
Version 2 → 04F 07 2 18 N 2 N								
Version 1 → 04F 07 2 18 N 1 N								
Version 3 → 04F 07 2 18 N 3 N								

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
		NPTF	inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

0												
Without manual override												
04F 03 2 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30	A - SOL10 B - SOL11
04F 04 2 12 _ 0 N		3/8"	15/32 (12)	25	3.38 (2.90)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30	A - SOL10 B - SOL11
04F 05 2 12 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	15/32 (12)	25	3.53 (3.03)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30	A - SOL10 B - SOL11
04F 07 2 18 _ 0 N		E = EPDM +14°F +284°F (-10°C +140°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30
04F 09 2 25 _ 0 N			1"	1 (25)	25	12.78 (10.97)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30
2												
Without manual override and with reinforced and guided diaphragm												
04F 07 2 18 _ 2 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30	A - SOL10 B - SOL11
04F 09 2 25 _ 2 N		V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	- 145 (10)	145 (10)	- 8	7.5 11	22 30
	E = EPDM +14°F +284°F (-10°C +140°C)											

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



With speed regulator
Allow to adjust the opening
and closing diaphragm speed.

2/2 NO

1/4" → 1"

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
		NPTF	inch (mm)	cSt	gpm (m ³ /h)	Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

1

With speed regulator and without manual override

04F 07 2 18 _ 1 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
	145 (10)						145 (10)	8	11	30	B - SOL11	
04F 09 2 25 _ 1 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
	E = EPDM +14°F +284°F (-10°C +140°C)						145 (10)	145 (10)	8	11	30	B - SOL11

3

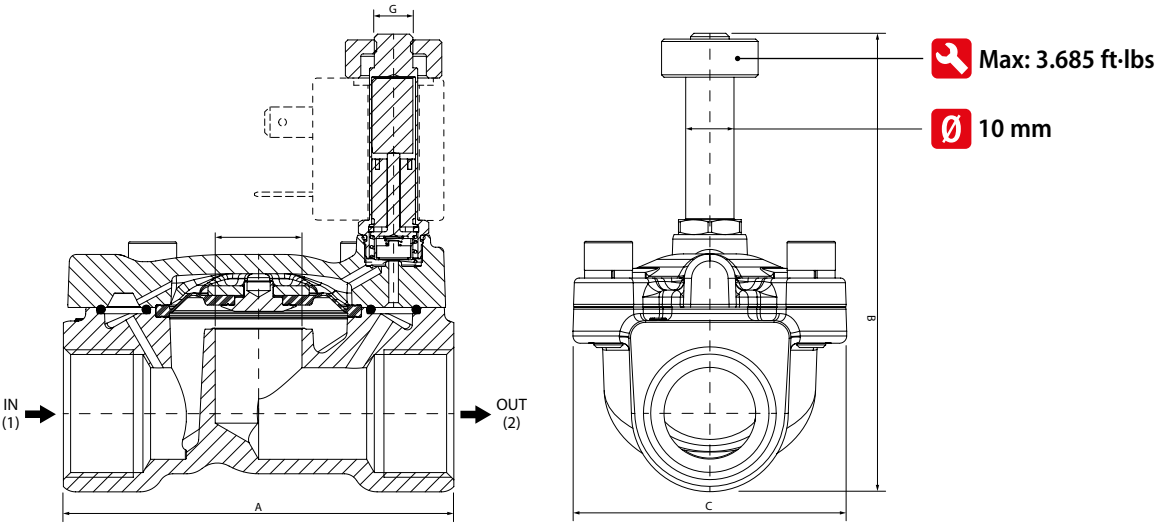
With speed regulator, without manual override and with reinforced and guided diaphragm

04F 07 2 18 _ 3 N	N = NBR +14°F +194°F (-10°C +90°C)	3/4"	45/64 (18)	25	5.72 (4.91)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
	145 (10)						145 (10)	8	11	30	B - SOL11	
04F 09 2 25 _ 3 N	V = FKM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	10.86 (9.32)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
	E = EPDM +14°F +284°F (-10°C +140°C)						145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

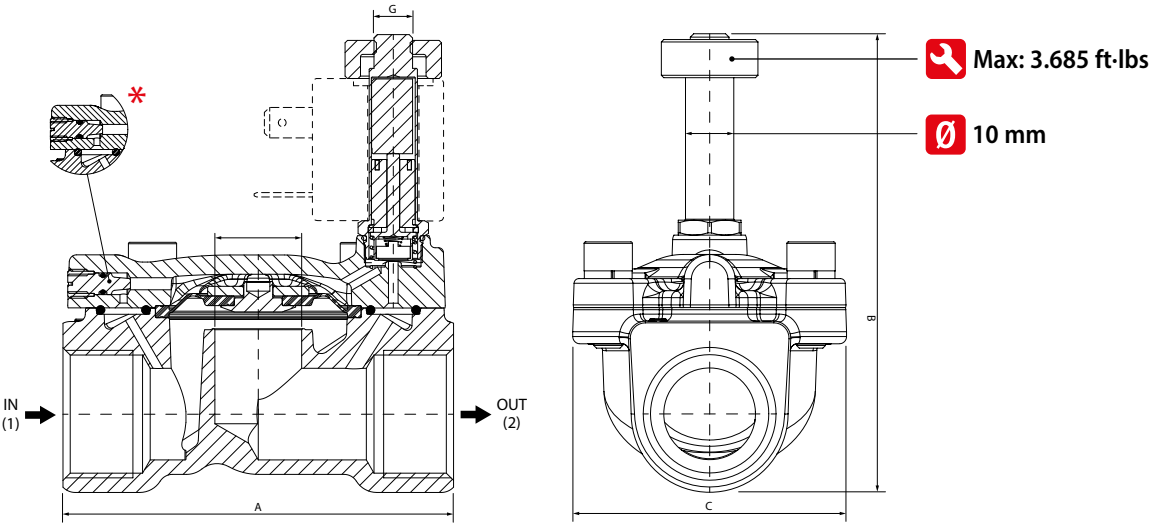
With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

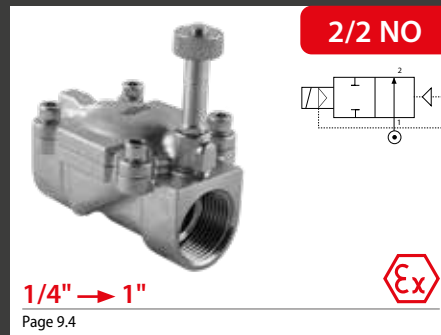
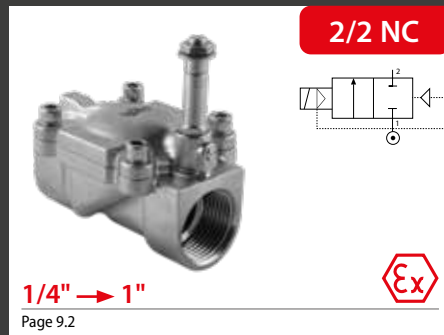


Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	3.015 (76.6)	1.385 (35.2)	M8 x 1
3/8"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
1/2"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1

* Speed regulator



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1



SERVO-ASSISTED SOLENOID VALVES WITH BODY IN STAINLESS STEEL AISI 316L

AISI 316L

Ex
II 2 G/D Ex h

UL
C US
CSA C22.2



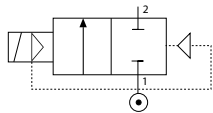
Series X4F

Series X4F

SERVO-ASSISTED SOLENOID VALVES IN STAINLESS STEEL AISI 316L

2/2 NC

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 4 F	0 3	1	1 0	N	H	N	A	A
	03 = 1/4"	1 = 2/2 NC	10 = 25/64 (10)	N = NBR	H = Without manual override	N = NPTF	A = A series - SOL10	A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM	0 = With manual override		B = B series - SOL11	B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM				1 = 24V AC
	07 = 3/4"		25 = 1 (25)					2 = 110V AC
	09 = 1"							3 = 220V AC
							Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.	

Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
		NPTF	inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

H Without manual override												
X4F 03 1 10 _ H N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
X4F 04 1 14 _ H N		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	232 (16)	232 (16)	8	11	30	B - SOL11
X4F 05 1 14 _ H N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
X4F 07 1 18 _ H N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	8	11	30	B - SOL11
X4F 09 1 25 _ H N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

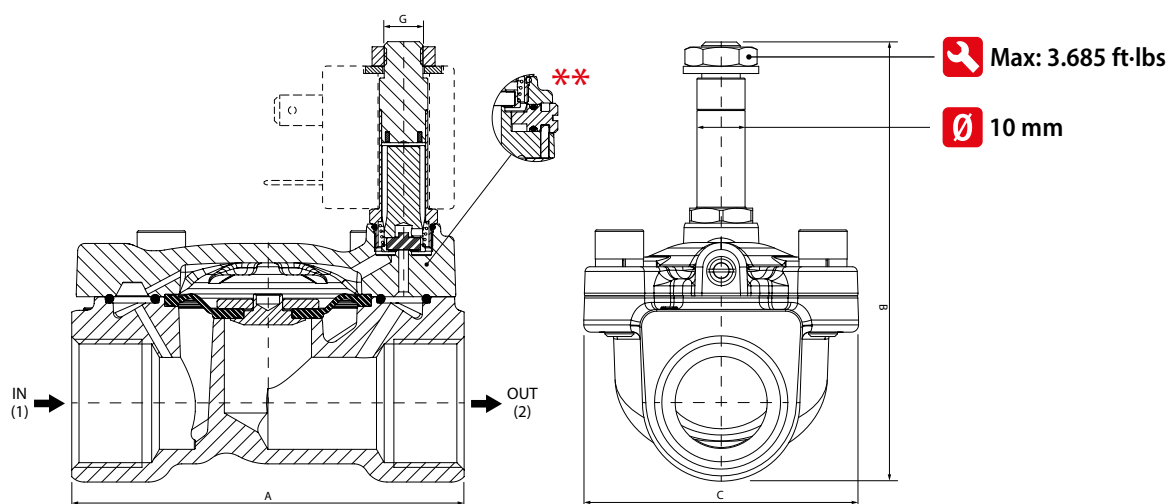
O With manual override												
X4F 03 1 10 _ O N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
X4F 04 1 14 _ O N		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	232 (16)	232 (16)	8	11	30	B - SOL11
X4F 05 1 14 _ O N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
X4F 07 1 18 _ O N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	232 (16)	232 (16)	8	11	30	B - SOL11
X4F 09 1 25 _ O N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	232 (16)	232 (16)	6.5	7.5	22	A - SOL10
							363 (25)	363 (25)	8	11	30	B - SOL11

① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included

** Manual override



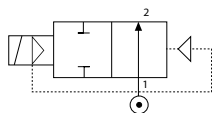
Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	2.854 (72.5)	1.385 (35.2)	M8 x 0.75
3/8"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
1/2"	2.570 (65.3)	3.153 (80.1)	1.826 (46.4)	M8 x 0.75
3/4"	3.188 (81)	3.578 (90.9)	2.232 (56.7)	M8 x 0.75
1"	3.740 (95)	3.818 (97)	2.559 (65)	M8 x 0.75

Series X4F

SERVO-ASSISTED SOLENOID VALVES IN STAINLESS STEEL AISI 316L

2/2 NO

1/4" → 1"



Component Parts and Materials

- 1 Body: Stainless steel AISI 316L
- 2 Seals: NBR - EPDM - FKM
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel
- 6 Shading ring: Copper



General features - X4F

- Recommended horizontal mounting position
- Operator kit Ø 10 mm
- ATEX II 2G/D Ex h certification
- Coils: Class H - - CSA C22.2



Maximum allowable pressure

363 psi (25 bar)



Compatibility and materials table

Page 0.13 - 0.14



Room temperature with coil class H

+14°F +176°F
-10°C +80°C



Applications

- Water, Oils, Neutral and corrosive liquids
- Water management, Water treatment
- Food industry, Washing systems
- Industrial processes, Refrigeration
- Air, Inert and aggressive gases
- Oxygen, Steam
- Chemical and Petrochemical industry



Silver-plated shading ring on request



Ordering codes

Series	Port size	Functions	Orifice inch (mm)	Sealing materials	Version	Thread	Suitable coils	
X 4 F	0 3	2	1 0	N	0	N	A	A
	03 = 1/4"	2 = 2/2 NO	10 = 25/64 (10)	N = NBR	0 = Without manual override	N = NPTF	A = A series - SOL10	A = 12V DC
	04 = 3/8"		14 = 35/64 (14)	E = EPDM			B = B series - SOL11	B = 24V DC
	05 = 1/2"		18 = 45/64 (18)	V = FKM				1 = 24V AC
	07 = 3/4"		25 = 1 (25)					2 = 110V AC
	09 = 1"							3 = 220V AC

Valves and coils are supplied separately. Upon commercial agreements can be supplied assembled.

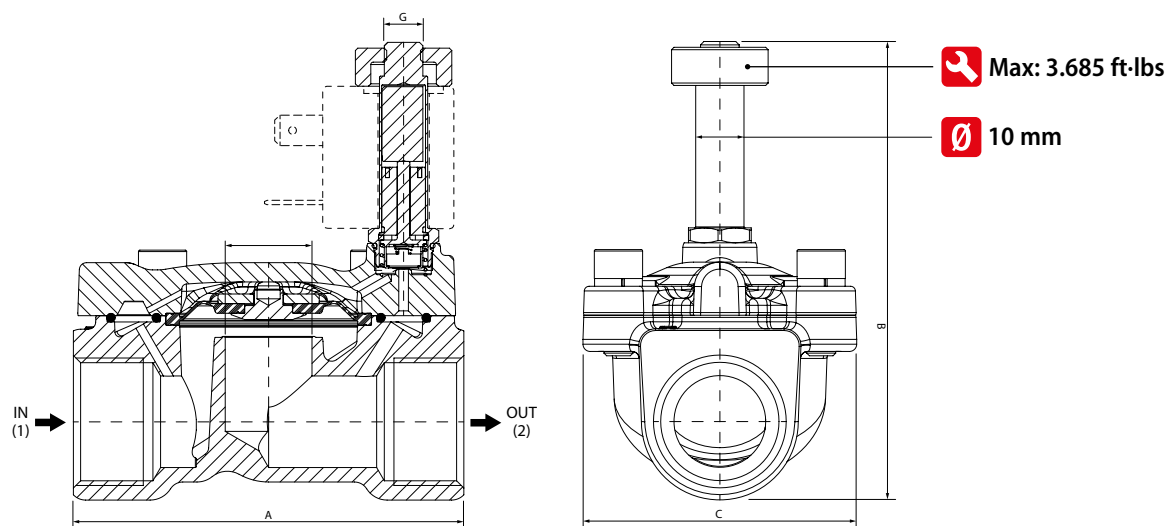
Code	Sealing materials	Port size	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)			Power		Coils	
		NPTF	inch (mm)	cSt	gpm (m³/h)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3

0 Without manual override												
X4F 03 2 10 _ 0 N	N = NBR +14°F +194°F (-10°C +90°C)	1/4"	25/64 (10)	25	2.19 (1.88)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
X4F 04 2 14 _ 0 N		3/8"	35/64 (14)	25	3.87 (3.32)	2 (0.15)	-	145 (10)	8	11	30	B - SOL11
X4F 05 2 14 _ 0 N	V = FKM +14°F +284°F (-10°C +140°C)	1/2"	35/64 (14)	25	4.11 (3.53)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
X4F 07 2 18 _ 0 N		3/4"	45/64 (18)	25	6.48 (5.56)	2 (0.15)	-	145 (10)	8	11	30	B - SOL11
X4F 09 2 25 _ 0 N	E = EPDM +14°F +284°F (-10°C +140°C)	1"	1 (25)	25	12.78 (10.97)	2 (0.15)	-	145 (10)	-	7.5	22	A - SOL10
							-	145 (10)	8	11	30	B - SOL11

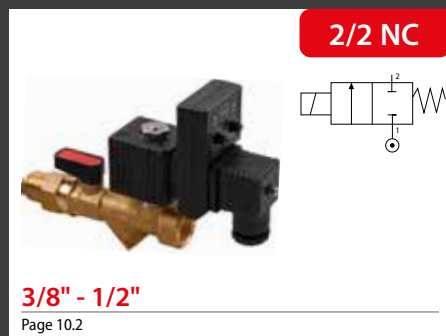
① Select seal material

With steam: EPDM - P max = 36 psi (2.5 bar)

Coil not included



Size	A inch (mm)	B inch (mm)	C inch (mm)	G
1/4"	2.185 (55.5)	3.015 (76.6)	1.385 (35.2)	M8 x 1
3/8"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
1/2"	2.570 (65.3)	3.314 (84.2)	1.826 (46.4)	M8 x 1
3/4"	3.188 (81)	3.740 (95)	2.232 (56.7)	M8 x 1
1"	3.740 (95)	3.980 (101.1)	2.559 (65)	M8 x 1



Series 90975 - 90976

Coils & Connectors





Series 90976

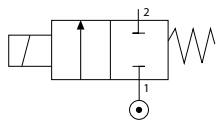


Series 90976

DRAIN VALVE

2/2 NC

3/8 - 1/2"



Component Parts and Materials

- 1 Body: Brass CW617N
- 2 Seals: NBR
- 3 Armature tube: Stainless steel
- 4 Fixed and mobile core: Stainless steel AISI 430FR
- 5 Springs: Stainless steel



Advantages

- Taper nipple (3 pieces)
- Analog and digital timer
- Manual ball valve



Degree of filtration

500 µm



Maximum allowable pressure

580 psi (40 bar)



Fluids

Air / Inert gases / Water



Room temperature with coil class H

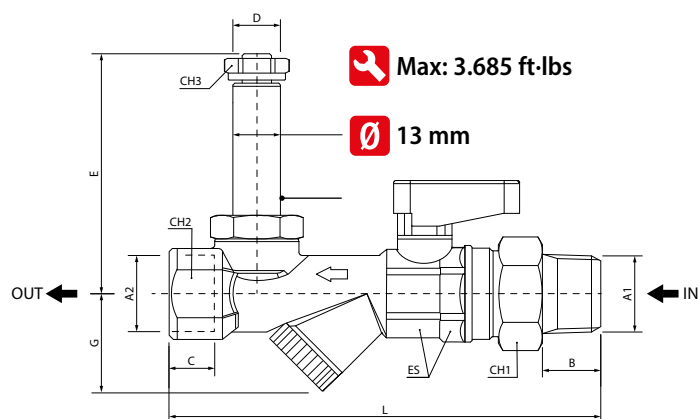
+14°F +176°F
-10°C +80°C

Code	Item	Port size		Sealing materials	Ø Orifice	Viscosity	Cv (Kv)	Differential pressure (OPD)		Power	Coils	
		A1 (NPTF)	A2 (NPTF)		inch (mm)	cSt	gpm (m³/h)	psi (bar)		VA	Size	Model
								Min	Max		mm	D - Page 11.5
909764 D2 4 2	90976-06-08	3/8"	1/2"	NBR +14°F +194°F (-10°C +90°C)	1/8 (3)	53	0.24 (0.21)	0	435 (30)	21	30	D2 (SOL20110AB000) 110V AC / 50-60 Hz
909765 D2 4 2	90976-08-08	1/2"	1/2"			53	0.24 (0.21)	0	435 (30)	21	30	D2 (SOL20110AB000) 110V AC / 50-60 Hz

Timer (series 90987) included

Coil (model: SOL20110AB000) included

Connector complete with cable included



Code	A1 (NPTF)	A2 (NPTF)	B inch (mm)	C inch (mm)	D inch (mm)	CH1 inch (mm)	CH2 inch (mm)	CH3 inch (mm)	L inch (mm)	E inch (mm)	G inch (mm)	ES inch (mm)	Cable Ft. (Mt.)
909764 D2 4 2	3/8"	1/2"	0.452 (11.5)	0.472 (12)	0.511 (13)	1.062 (27)	0.984 (25)	0.629 (16)	4.468 (113.5)	2.578 (65.5)	1.043 (26.5)	22 - 23	6.5 (2)
909765 D2 4 2	1/2"	1/2"	0.629 (16)	0.472 (12)	0.511 (13)	1.062 (27)	0.984 (25)	0.629 (16)	4.625 (117.5)	2.578 (65.5)	1.043 (26.5)	22 - 23	6.5 (2)

90985

ANALOG TIMER DIN43650A



Code	Pack	
90985 00 001	1	
	minmax	
 Temperature	+14°F -10 °C	+122°F +50 °C



Features

- 24 - 240V AC/DC
- IP65 - EN6052
- 1 A Max
- 0.5 - 10 Sec. ON
- 0.5 - 45 Min. OFF
- Reset/Test

90987

DIGITAL TIMER DIN43650A



Code	Voltage	Power consumption	Pack.
90987 00 001	7 - 36V AC/DC	20mA MAX	1
90987 00 002	110 - 240V AC/DC	10mA MAX	1
	min	max	
Temperature	+14°F -10 °C	+158°F +70 °C	



Features

- Insulation Voltage: 100V AC - 1 minute
- Insulation Resistance: 50MΩ (500VDC)
- IP65 - EN6052
- Output Current: 1.5 A Max
- 1 Sec. - 100 Hours -> ON
- 1 Sec. - 100 Hours -> OFF
- 4 DIGIT: Mode/Add/Enter/Reset



22 mm

Series A

Page 11.2

UL US
CSA C22.2



30 mm

Series B

Page 11.3

UL US
CSA C22.2



30 mm

Series C

Page 11.4

UL US
CSA C22.2



30 mm

Series D

Page 11.5

UL US
CSA C22.2



36 mm

Series E

Page 11.6

UL US
CSA C22.2



Connectors

Page 11.7

UL US
CSA C22.2



Coils & Connectors

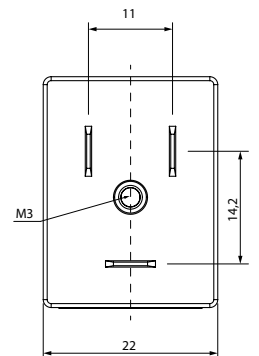
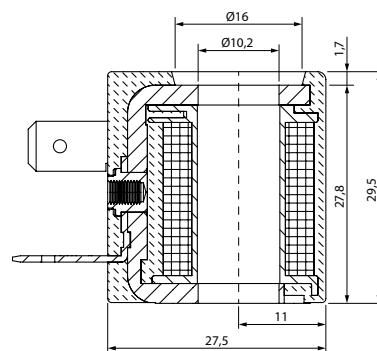
SERIES A

COIL

22 mm 

10 mm 

ED 100% 



UL 429 & CSA C22.2 NO. 139-13

The dimensions are in millimeters (mm)

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
AA	SOL10012C4000	12V DC	6.5 W	±10 %		
AB	SOL10024C4000	24V DC	6.5 W	±10 %		
A1	SOL10024A8000	24V AC / 50-60 Hz	7.5 VA	±10 %	+14°F (-10°C)	+176°F (+80°C)
A2	SOL10110A8000	110V AC / 50-60 Hz	7.5 VA	±10 %		
A3	SOL10220A8000	220V AC / 50-60 Hz	7.5 VA	±10 %		

INSULATION
CLASS

H
EN 60085

ENCAPSULATION
MATERIAL

RYNITE®

ELECTRICAL
CONNECTIONS

FORM B
EN 175301-803
(EX DIN 43650)

AMBIENT
TEMPERATURE

+14°F +176°F
(-10°C +80°C)

PROTECTION
DEGREE

IP67
IEC 60529
with connector IP67

OPTIONS

Other voltages/powers on request

SERIES B

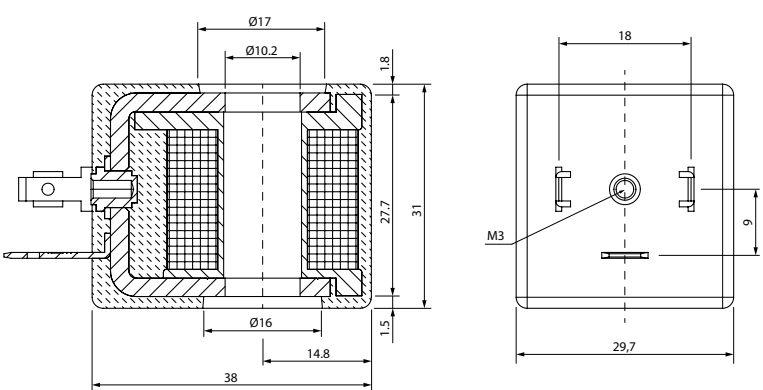
COIL



30 mm 

10 mm 

ED 100% 



The dimensions are in millimeters (mm)



UL 429 & CSA C22.2 NO. 139-13

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
BA	SOL11012C5000	12V DC	8 W	±10 %	+14°F (-10°C)	+176°F (+80°C)
BB	SOL11024C5000	24V DC	8 W	±10 %		
B1	SOL11024A9000	24V AC / 50-60 Hz	11 VA	±10 %		
B2	SOL11110A9000	110V AC / 50-60 Hz	11 VA	±10 %		
B3	SOL11220A9000	220V AC / 50-60 Hz	11 VA	±10 %		

INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	RYNITE®	ELECTRICAL CONNECTIONS	FORM A EN 175301-803 (EX DIN 43650)
AMBIENT TEMPERATURE	+14°F +176°F (-10°C +80°C)	PROTECTION DEGREE	IP67 IEC 60529 with connector IP67	OPTIONS	Other voltages/powers on request

SERIES C

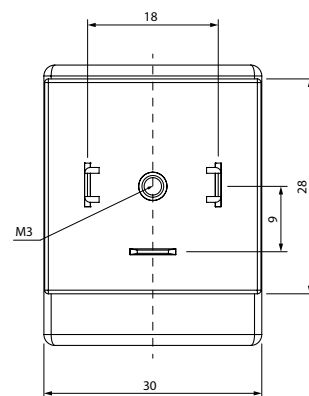
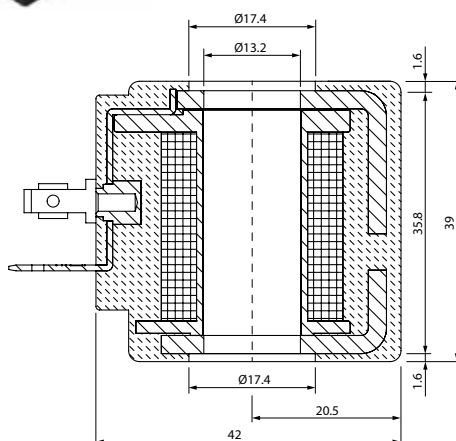
COIL



30 mm

13 mm

ED 100%



UL 429 & CSA C22.2 NO. 139-13

The dimensions are in millimeters (mm)

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
CA	SOL20012C5000	12V DC	8 W	±10 %	+14°F (-10°C)	+176°F (+80°C)
CB	SOL20024C5000	24V DC	8 W	±10 %		
C1	SOL20024AA000	24V AC / 50-60 Hz	14 VA	±10 %		
C2	SOL20110AA000	110V AC / 50-60 Hz	14 VA	±10 %		
C3	SOL20220AA000	220V AC / 50-60 Hz	14 VA	±10 %		

INSULATION
CLASS

H
EN 60085

ENCAPSULATION
MATERIAL

RYNITE®

ELECTRICAL
CONNECTIONS

FORM A
EN 175301-803
(EX DIN 43650)

AMBIENT
TEMPERATURE

+14°F +176°F
(-10°C +80°C)

PROTECTION
DEGREE

IP67
IEC 60529
with connector IP67

OPTIONS

Other voltages/powers on request

SERIES D

COIL

30 mm



13 mm

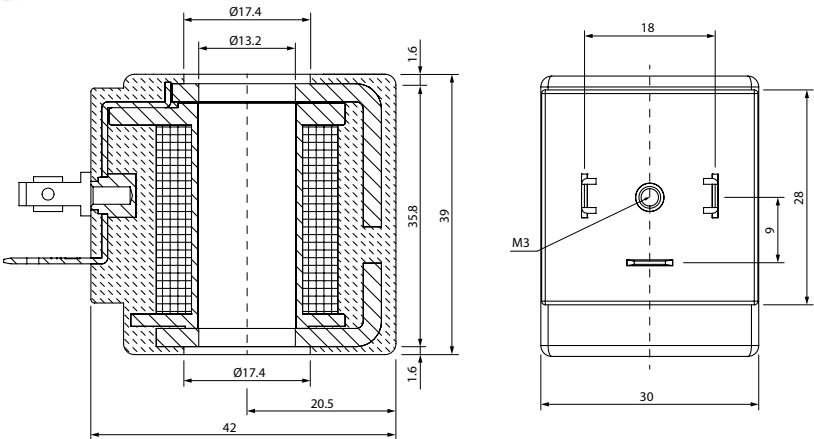


ED 100%





UL 429 & CSA C22.2 NO. 139-13



The dimensions are in millimeters (mm)

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
DA	SOL20012C6000	12V DC	14 W	±10 %	+14°F (-10°C)	+176°F (+80°C)
DB	SOL20024C6000	24V DC	14 W	±10 %		
D1	SOL20024AB000	24V AC / 50-60 Hz	21 VA	±10 %		
D2	SOL20110AB000	110V AC / 50-60 Hz	21 VA	±10 %		
D3	SOL20220AB000	220V AC / 50-60 Hz	21 VA	±10 %		

INSULATION CLASS	H EN 60085	ENCAPSULATION MATERIAL	RYNITE®	ELECTRICAL CONNECTIONS	FORM A EN 175301-803 (EX DIN 43650)
AMBIENT TEMPERATURE	+14°F +176°F (-10°C +80°C)	PROTECTION DEGREE	IP67 IEC 60529 with connector IP67	OPTIONS	Other voltages/powers on request

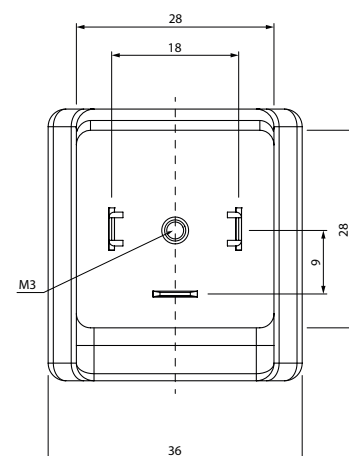
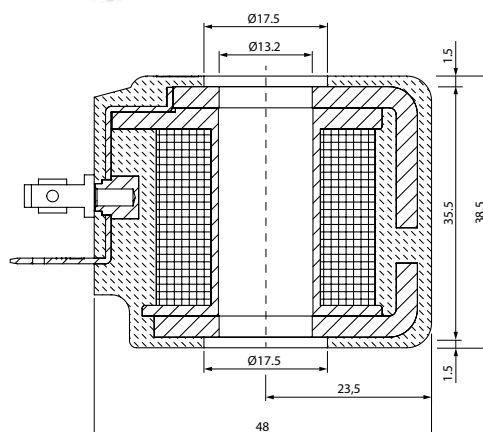
SERIES E

COIL

36 mm 

13 mm 

ED 100% 



UL 429 & CSA C22.2 NO. 139-13

The dimensions are in millimeters (mm)

Reference	Code	Voltage	Power	Voltage tolerance	Ambient temperature	
					Min	Max
EA	SOL21012C7000	12V DC	22 W	±10 %	+14°F (-10°C)	+176°F (+80°C)
EB	SOL21024C7000	24V DC	22 W	±10 %		
E1	SOL21024AC000	24V AC / 50-60 Hz	31 VA	±10 %		
E2	SOL21110AC000	110V AC / 50-60 Hz	31 VA	±10 %		
E3	SOL21220AC000	220V AC / 50-60 Hz	31 VA	±10 %		

INSULATION
CLASS

H
EN 60085

ENCAPSULATION
MATERIAL

RYNITE®

ELECTRICAL
CONNECTIONS

FORM A
EN 175301-803
(EX DIN 43650)

AMBIENT
TEMPERATURE

+14°F +176°F
(-10°C +80°C)

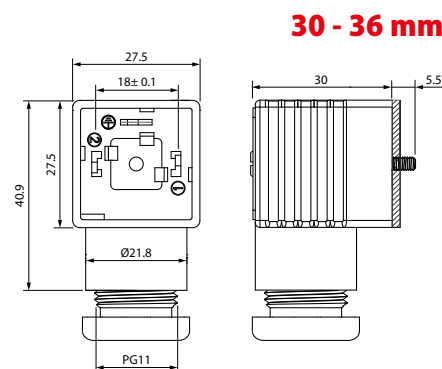
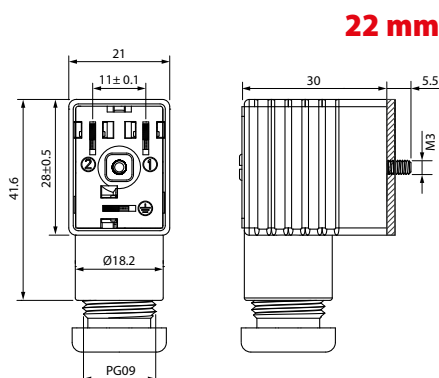
PROTECTION
DEGREE

IP67
IEC 60529
with connector IP67

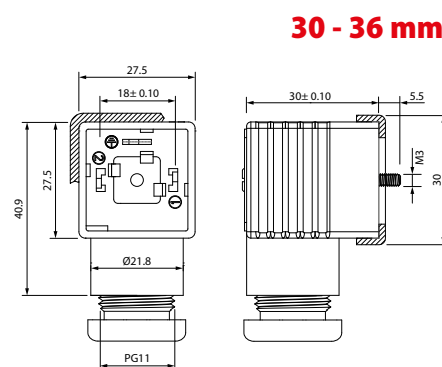
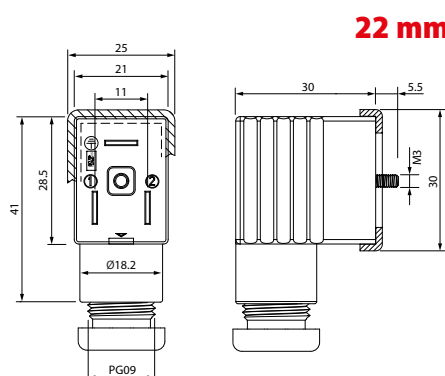
OPTIONS

Other voltages/powers on request

CONNECTORS



The dimensions are in millimeters (mm)



The dimensions are in millimeters (mm)

Code	Size mm	Colour	Characteristics
CON01 000 01	22	BLACK	2 PINS
CON02 024 00	22	TRANSPARENT	LED + VDR 0 - 24V
CON02 110 00	22	TRANSPARENT	LED + VDR 110V
CON02 250 00	22	TRANSPARENT	LED + VDR 220V
CON31 000 01	30 - 36	BLACK	2 PINS
CON32 024 00	30 - 36	TRANSPARENT	LED + VDR 0 - 24V
CON32 110 00	30 - 36	TRANSPARENT	LED + VDR 110V
CON32 250 00	30 - 36	TRANSPARENT	LED + VDR 220V
CONU1 000 01	22	BLACK	2 PINS
CONU3 100 01	30 - 36	BLACK	2 PINS

UL 1977 AND CAN/CSA C22.2 NO. 182.3

VDR: Fitted with varistors as surge protection device.

ELECTRICAL
CONNECTIONS
Size 22 mm

FORM B
EN 175301-803
(EX DIN 43650)

ELECTRICAL
CONNECTIONS
Size 30 - 36 mm

FORM A
EN 175301-803
(EX DIN 43650)

PROTECTION
DEGREE

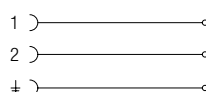
IP67
IEC 60529

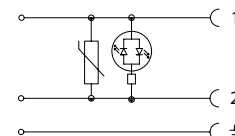
CABLE
DIAMETER

6 ÷ 8 mm
&
8 ÷ 11 mm


Wiring

CON01 000 01
CONU1 000 01

CON31 000 01
CONU3 100 01

CON02 024 00
CON02 110 00
CON02 250 00

CON32 024 00
CON32 110 00
CON32 250 00


Solenoid Pilots



Solenoid Pilots

Coils & Connectors



Solenoid Pilots



SOLENOID PILOTS

SOLENOID PILOTS 2/2 NC - Ø10 mm

2/2 NC

Ø 10 mm



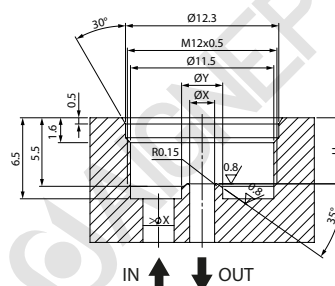
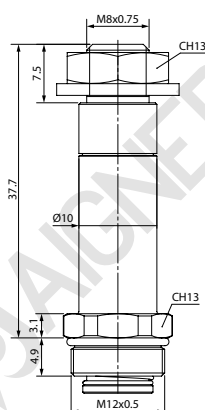
Operator kit for valves series:

01F
X1F
F1F
04F
X4F

Code	Sealing materials	Ø X (mm)	Ø Y (mm)	H (mm)	Differential pressure (OPD)			Power		Coils	
					psi (bar)			DC	AC	Size	Series
					Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
① OPK04_TB2NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	0.110 (2.8)	0.208 (5.3)	0	232 (16)	435 (30)	6.5	7.5	22	A - SOL10
		5/64 (2)	0.130 (3.3)	0.208 (5.3)	0	580 (40)	580 (40)	8	11	30	B - SOL11
		3/32 (2.5)	0.149 (3.8)	0.216 (5.5)	0	174 (12)	363 (25)	6.5	7.5	22	A - SOL10
		1/8 (3)	0.169 (4.3)	0.220 (5.6)	0	435 (30)	580 (40)	8	11	30	B - SOL11
		1/8 (3)	0.169 (4.3)	0.220 (5.6)	0	65 (4.5)	261 (18)	6.5	7.5	22	A - SOL10
		5/32 (4)	0.208 (5.3)	0.228 (5.8)	0	189 (13)	435 (30)	8	11	30	B - SOL11
		1/8 (3)	0.169 (4.3)	0.220 (5.6)	0	44 (3)	145 (10)	6.5	7.5	22	A - SOL10
		5/32 (4)	0.208 (5.3)	0.228 (5.8)	0	102 (7)	232 (16)	8	11	30	B - SOL11
		5/32 (4)	0.208 (5.3)	0.228 (5.8)	0	15 (1)	58 (4)	6.5	7.5	22	A - SOL10
		5/32 (4)	0.208 (5.3)	0.228 (5.8)	0	36 (2.5)	116 (8)	8	11	30	B - SOL11

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 2/2 NO - Ø10 mm

2/2 NO

Ø 10 mm



Operator kit for valves series:

Brass

01F
F1F
04F

Operator kit for valves series:

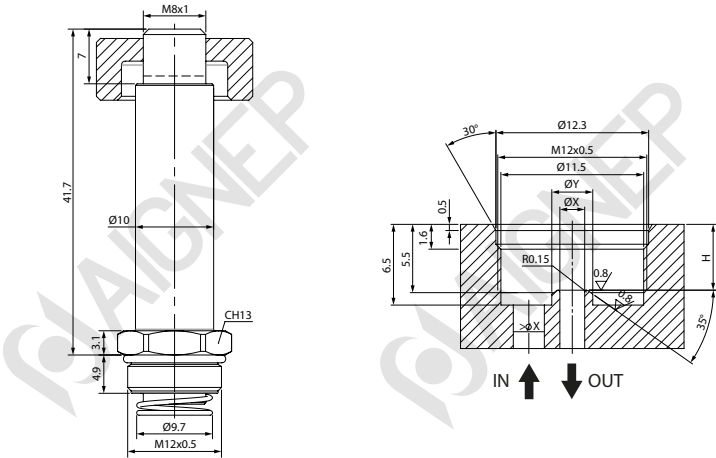
Stainless steel

01F
X1F
F1F
04F
X4F

Code		Sealing materials	Ø X	Ø Y	H	Differential pressure (OPD)			Power		Coils	
①	①	inch (mm)	inch (mm)	inch (mm)	psi (bar)			DC	AC	Size	Series	
					Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3	
OPK04_TB2NO00 Brass	N = NBR +14°F +194°F (-10°C +90°C)	1/16 (1.5)	0.110 (2.8)	0.208 (5.3)	0	-	261 (18)	-	7.5	22	A - SOL10	
						261 (18)	261 (18)	8	11	30	B - SOL11	
		5/64 (2)	0.130 (3.3)	0.208 (5.3)	0	-	145 (10)	-	7.5	22	A - SOL10	
						145 (10)	145 (10)	8	11	30	B - SOL11	
OPK04_TB2NO0X Stainless steel	V = FKM +14°F +284°F (-10°C +140°C)	3/32 (2.5)	0.149 (3.8)	0.216 (5.5)	0	-	94 (6.5)	-	7.5	22	A - SOL10	
						94 (6.5)	94 (6.5)	8	11	30	B - SOL11	
		1/8 (3)	0.169 (4.3)	0.220 (5.6)	0	-	61 (4.2)	-	7.5	22	A - SOL10	
						61 (4.2)	61 (4.2)	8	11	30	B - SOL11	

1 Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NC - Ø10 mm

3/2 NC

Ø 10 mm



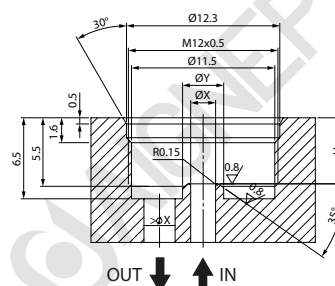
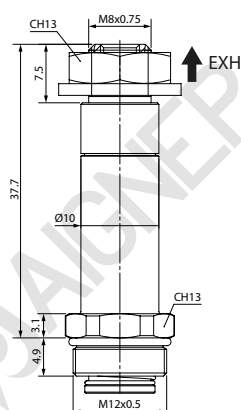
Operator kit for valves series:

01F
X1F
F1F

Code	Sealing materials	Ø X	Ø EXH	Ø Y	H	Differential pressure (OPD)			Power		Coils	
①	①	inch (mm)	inch (mm)	inch (mm)	inch (mm)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
OPK04_TB3NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	1/16 (1.4)	0.110 (2.8)	0.208 (5.3)	0	196 (13.5)	196 (13.5)	6.5	7.5	22	A - SOL10
						0	196 (13.5)	196 (13.5)	8	11	30	B - SOL11
		5/64 (2)	1/16 (1.4)	0.130 (3.3)	0.208 (5.3)	0	116 (8)	116 (8)	6.5	7.5	22	A - SOL10
						0	116 (8)	116 (8)	8	11	30	B - SOL11
		3/32 (2.5)	1/16 (1.4)	0.149 (3.8)	0.216 (5.5)	0	73 (5)	73 (5)	6.5	7.5	22	A - SOL10
						0	73 (5)	73 (5)	8	11	30	B - SOL11
		1/8 (3)	1/16 (1.4)	0.169 (4.3)	0.220 (5.6)	0	51 (3.5)	51 (3.5)	6.5	7.5	22	A - SOL10
						0	51 (3.5)	51 (3.5)	8	11	30	B - SOL11
		5/32 (4)	1/16 (1.4)	0.208 (5.3)	0.228 (5.8)	0	15 (1)	15 (1)	6.5	7.5	22	A - SOL10
						0	15 (1)	15 (1)	8	11	30	B - SOL11

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NO - Ø10 mm

3/2 NO

Ø 10 mm



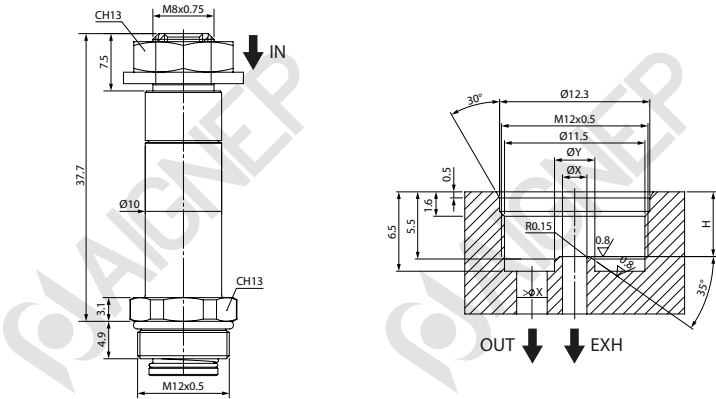
Operator kit for valves series:

01F
X1F
F1F

Code	Sealing materials	Ø IN	Ø X (EXH)	Ø Y	H	Differential pressure (OPD)			Power		Coils	
①	①	inch (mm)	inch (mm)	inch (mm)	inch (mm)	psi (bar)			DC	AC	Size	Series
						Min	Max DC	Max AC	W	VA	mm	A - Page 11.2 B - Page 11.3
OPK04_TB3NO00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.4)	1/16 (1.5)	0.110 (2.8)	0.208 (5.3)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
		1/16 (1.4)	5/64 (2)	0.130 (3.3)	0.208 (5.3)	0	145 (10)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11
		1/16 (1.4)	3/32 (2.5)	0.149 (3.8)	0.216 (5.5)	0	58 (4)	145 (10)	6.5	7.5	22	A - SOL10
							145 (10)	145 (10)	8	11	30	B - SOL11

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOT

SOLENOID PILOTS 2/2 NC - Ø13 mm

2/2 NC

Ø 13 mm



Operator kit for valves series:

* 02F
X2F
F2F
03F
90976

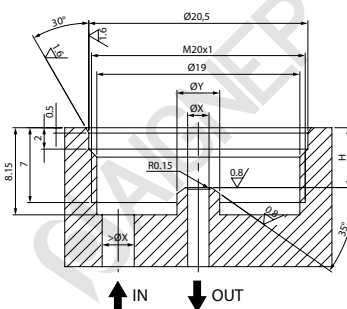
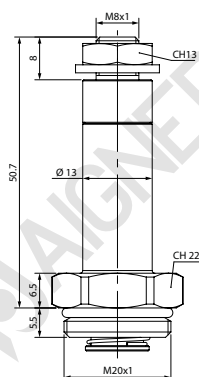
* OPK11 - Ø 6.4 mm

Code	Sealing materials	Ø X	Ø Y	H	Differential pressure (OPD)			Power		Coils	
		inch (mm)	inch (mm)	inch (mm)	psi (bar)			DC	AC	Size	Series
①	①				Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
OPK05_TB2NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	0.138 (3.5)	0.220 (5.6)	0	725 (50)	725 (50)	8	14	30	C - SOL20
						725 (50)	725 (50)	14	21	30	D - SOL20
						725 (50)	725 (50)	22	31	36	E - SOL21
		5/64 (2)	0.157 (4)	0.220 (5.6)	0	508 (35)	725 (50)	8	14	30	C - SOL20
						725 (50)	725 (50)	14	21	30	D - SOL20
						725 (50)	725 (50)	22	31	36	E - SOL21
		3/32 (2.5)	0.177 (4.5)	0.228 (5.8)	0	305 (21)	508 (35)	8	14	30	C - SOL20
						435 (30)	580 (40)	14	21	30	D - SOL20
						653 (45)	725 (50)	22	31	36	E - SOL21
		1/8 (3)	0.197 (5)	0.232 (5.9)	0	145 (10)	305 (21)	8	14	30	C - SOL20
						232 (16)	435 (30)	14	21	30	D - SOL20
						580 (40)	580 (40)	22	31	36	E - SOL21
5/32 (4)		0.236 (6)	0.240 (6.1)	0	44 (3)	145 (10)	8	14	30	C - SOL20	
					87 (6)	203 (14)	14	21	30	D - SOL20	
					218 (15)	290 (20)	22	31	36	E - SOL21	
13/64 (5)		0.267 (6.8)	0.252 (6.4)	0	20 (1.4)	73 (5)	8	14	30	C - SOL20	
					32 (2.2)	102 (7)	14	21	30	D - SOL20	
					80 (5.5)	145 (10)	22	31	36	E - SOL21	
1/4 (6.4)		0.315 (8)	0.260 (6.6)	0	-	36 (2.5)	-	14	30	C - SOL20	
					22 (1.5)	51 (3.5)	14	21	30	D - SOL20	
					65 (4.5)	73 (5)	22	31	36	E - SOL21	

① Select seal material

Coil not included

* Only for Ø 6.4 mm



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 2/2 NO - Ø13 mm

2/2 NO

Ø 13 mm



Operator kit for valves series:

Brass

O2F
F2F

Operator kit for valves series:

Stainless steel

O2F
X2F
F2F

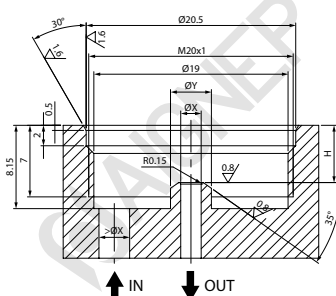
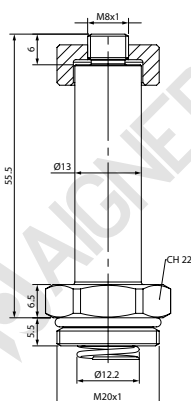
Code	Sealing materials	Ø X	Ø Y	H	Differential pressure (OPD)		
①	①	inch (mm)	inch (mm)	inch (mm)	psi (bar)		
					Min	Max DC	Max AC

Power		Coils	
DC	AC	Size	Series
W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6

OPK05_TB2NO00 Brass	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	0.138 (3.5)	0.220 (5.6)	0	-	363 (25)	-	14	30	C - SOL20
						363 (25)	363 (25)	14	21	30	D - SOL20
						363 (25)	363 (25)	22	31	36	E - SOL21
		5/64 (2)	0.157 (4)	0.220 (5.6)	0	-	261 (18)	-	14	30	C - SOL20
						261 (18)	261 (18)	14	21	30	D - SOL20
						261 (18)	261 (18)	22	31	36	E - SOL21
		3/32 (2.5)	0.177 (4.5)	0.228 (5.8)	0	-	174 (12)	-	14	30	C - SOL20
						174 (12)	174 (12)	14	21	30	D - SOL20
						174 (12)	174 (12)	22	31	36	E - SOL21
OPK05_TB2NO0X Stainless steel		1/8 (3)	0.197 (5)	0.232 (5.9)	0	-	109 (7.5)	-	14	30	C - SOL20
						109 (7.5)	109 (7.5)	14	21	30	D - SOL20
						109 (7.5)	109 (7.5)	22	31	36	E - SOL21
		5/32 (4)	0.236 (6)	0.240 (6.1)	0	-	65 (4.5)	-	14	30	C - SOL20
						65 (4.5)	65 (4.5)	14	21	30	D - SOL20
						65 (4.5)	65 (4.5)	22	31	36	E - SOL21
		13/64 (5)	0.267 (6.8)	0.252 (6.4)	0	-	36 (2.5)	-	14	30	C - SOL20
						36 (2.5)	36 (2.5)	14	21	30	D - SOL20
						36 (2.5)	36 (2.5)	22	31	36	E - SOL21

① Select seal material

Coil not included



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NC - Ø13 mm

3/2 NC

Ø 13 mm



Operator kit for valves series:

OPK05

02F
X2F
F2F (optional)

Operator kit for valves series:

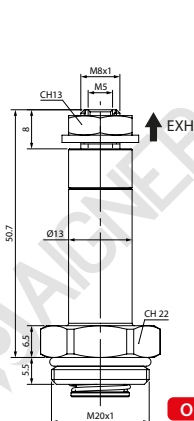
OPK10

F2F
02F (optional)
X2F (optional)

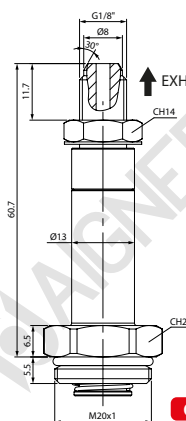
Code	Sealing materials	Ø X inch (mm)	Ø EXH		Ø Y inch (mm)	H inch (mm)	Differential pressure (OPD)			Power		Coils	
			OPK05 inch (mm)	OPK10 inch (mm)			psi (bar)			DC W	AC VA	Size mm	Series C - Page 11.4 D - Page 11.5 E - Page 11.6
OPK05_TB3NC00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C)	1/16 (1.5)	5/64 (1.9)	3/32 (2.3)	0.138 (3.5)	0.220 (5.6)	0	363 (25)	363 (25)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21
		5/64 (2)	5/64 (1.9)	3/32 (2.3)	0.157 (4)	0.220 (5.6)	0	261 (18)	261 (18)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21
		3/32 (2.5)	5/64 (1.9)	3/32 (2.3)	0.177 (4.5)	0.228 (5.8)	0	189 (13)	189 (13)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21
OPK10_TB3NC00 Stainless steel	E = EPDM +14°F +284°F (-10°C +140°C)	1/8 (3)	5/64 (1.9)	3/32 (2.3)	0.197 (5)	0.232 (5.9)	0	145 (10)	145 (10)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21
		5/32 (4)	5/64 (1.9)	3/32 (2.3)	0.236 (6)	0.240 (6.1)	0	87 (6)	87 (6)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21
		13/64 (5)	5/64 (1.9)	3/32 (2.3)	0.267 (6.8)	0.252 (6.4)	0	44 (3)	44 (3)	8	14	30	C - SOL20
										14	21	30	D - SOL20
										22	31	36	E - SOL21

① Select seal material

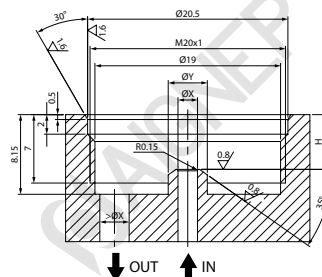
Coil not included



OPK05



OPK10



The dimensions are in millimeters (mm)

SOLENOID PILOTS

SOLENOID PILOTS 3/2 NO - Ø 13 mm

3/2 NO

Ø 13 mm



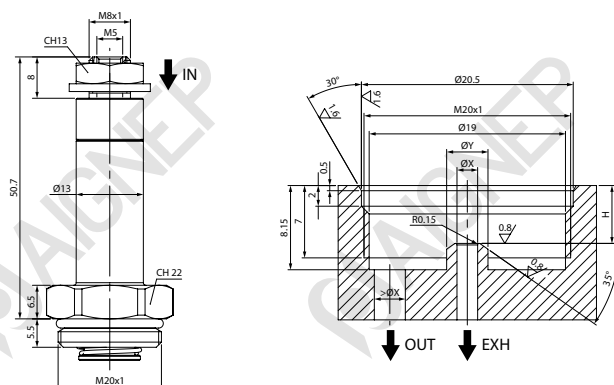
Operator kit for valves series:

02F
X2F
F2F

Code	Sealing materials	Ø IN	Ø X (EXH)	Ø Y	H	Differential pressure (OPD)			Power		Coils	
						psi (bar)			DC	AC	Size	Series
		inch (mm)	inch (mm)	inch (mm)	inch (mm)	Min	Max DC	Max AC	W	VA	mm	C - Page 11.4 D - Page 11.5 E - Page 11.6
① OPK05_TB3NO00 Stainless steel	N = NBR +14°F +194°F (-10°C +90°C) V = FKM +14°F +284°F (-10°C +140°C) E = EPDM +14°F +284°F (-10°C +140°C)	5/64 (1.9)	1/16 (1.5)	0.138 (3.5)	0.220 (5.6)	0	218 (15)	218 (15)	8	14	30	C - SOL20
							218 (15)	218 (15)	14	21	30	D - SOL20
							218 (15)	218 (15)	22	31	36	E - SOL21
		5/64 (1.9)	5/64 (2)	0.157 (4)	0.220 (5.6)	0	218 (15)	218 (15)	8	14	30	C - SOL20
							218 (15)	218 (15)	14	21	30	D - SOL20
							218 (15)	218 (15)	22	31	36	E - SOL21
		5/64 (1.9)	3/32 (2.5)	0.177 (4.5)	0.228 (5.8)	0	218 (15)	218 (15)	8	14	30	C - SOL20
							218 (15)	218 (15)	14	21	30	D - SOL20
							218 (15)	218 (15)	22	31	36	E - SOL21
		5/64 (1.9)	1/8 (3)	0.197 (5)	0.232 (5.9)	0	145 (10)	218 (15)	8	14	30	C - SOL20
							218 (15)	218 (15)	14	21	30	D - SOL20
							218 (15)	218 (15)	22	31	36	E - SOL21
		5/64 (1.9)	5/32 (4)	0.236 (6)	0.240 (6.1)	0	58 (4)	145 (10)	8	14	30	C - SOL20
							102 (7)	218 (15)	14	21	30	D - SOL20
							189 (13)	218 (15)	22	31	36	E - SOL21
		5/64 (1.9)	13/64 (5)	0.267 (6.8)	0.252 (6.4)	0	29 (2)	87 (6)	8	14	30	C - SOL20
							44 (3)	138 (9.5)	14	21	30	D - SOL20
							116 (8)	174 (12)	22	31	36	E - SOL21

① Select seal material

Coil not included



The dimensions are in millimeters (mm)



03F

Page 13.2



04F

Page 13.2



04F - Reinforced

Page 13.2



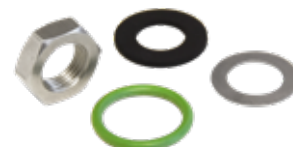
X4F

Page 13.3



OPK06 - OPK07

Page 13.3



OPK12

Page 13.3



90985

Page 13.4



90987

Page 13.4



VAL04

Page 13.4

FLUIDITY SPARE PARTS AND ACCESSORIES

Accessories



FLUIDITY SPARE PARTS AND ACCESSORIES

KIT - 03F

DIAPHRAGM KIT AND O-RING - Series 03F



Code	Sealing materials	Size	Pack.
03FK4 0 03 N 0	NBR	1/4"	1
03FK4 0 03 V 0	FKM	1/4"	1
03FK4 0 03 E 0	EPDM	1/4"	1
03FK4 0 04 N 0	NBR	3/8" - 1/2"	1
03FK4 0 04 V 0	FKM	3/8" - 1/2"	1
03FK4 0 04 E 0	EPDM	3/8" - 1/2"	1
03FK4 0 07 N 0	NBR	3/4"	1
03FK4 0 07 V 0	FKM	3/4"	1
03FK4 0 07 E 0	EPDM	3/4"	1
03FK4 0 09 N 0	NBR	1"	1
03FK4 0 09 V 0	FKM	1"	1
03FK4 0 09 E 0	EPDM	1"	1

KIT - 04F

DIAPHRAGM KIT AND O-RING - Series 04F



1/4" - 3/8" - 1/2"

3/4" - 1"

Code	Sealing materials	Size	Pack.
1/4" - 3/8" - 1/2"			
04FK4 0 03 N 0	NBR	1/4"	1
04FK4 0 03 V 0	FKM	1/4"	1
04FK4 0 03 E 0	EPDM	1/4"	1
04FK4 0 04 N 0	NBR	3/8" - 1/2" - Ø 12	1
04FK4 0 04 V 0	FKM	3/8" - 1/2" - Ø 12	1
04FK4 0 04 E 0	EPDM	3/8" - 1/2" - Ø 12	1
3/4" - 1"			
04FK4 0 07 N 0	NBR	3/4"	1
04FK4 0 07 V 0	FKM	3/4"	1
04FK4 0 07 E 0	EPDM	3/4"	1
04FK4 0 09 N 0	NBR	1"	1
04FK4 0 09 V 0	FKM	1"	1
04FK4 0 09 E 0	EPDM	1"	1

KIT - 04F

REINFORCED DIAPHRAGM KIT AND O-RING - Series 04F



3/4" - 1"

Code	Sealing materials	Size	Pack.
3/4" - 1"			
04FK4 0 07 N 2	NBR	3/4"	1
04FK4 0 07 V 2	FKM	3/4"	1
04FK4 0 07 E 2	EPDM	3/4"	1
04FK4 0 09 N 2	NBR	1"	1
04FK4 0 09 V 2	FKM	1"	1
04FK4 0 09 E 2	EPDM	1"	1

KIT - X4F

DIAPHRAGM KIT IN STAINLESS STEEL AND O-RING - Series X4F



1/4" - 3/8" - 1/2"

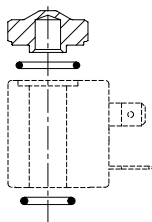


3/4" - 1"

Code	Sealing materials	Size	Pack.
1/4" - 3/8" - 1/2"			
X4FK4 0 03 N 0	NBR	1/4"	1
X4FK4 0 03 V 0	FKM	1/4"	1
X4FK4 0 03 E 0	EPDM	1/4"	1
X4FK4 0 04 N 0	NBR	3/8" - 1/2" - Ø 12	1
X4FK4 0 04 V 0	FKM	3/8" - 1/2" - Ø 12	1
X4FK4 0 04 E 0	EPDM	3/8" - 1/2" - Ø 12	1
X4FK4 0 Y3 N 0	NBR	3/8" - 1/2" - Ø 14	1
X4FK4 0 Y3 V 0	FKM	3/8" - 1/2" - Ø 14	1
X4FK4 0 Y3 E 0	EPDM	3/8" - 1/2" - Ø 14	1
3/4" - 1"			
X4FK4 0 07 N 0	NBR	3/4"	1
X4FK4 0 07 V 0	FKM	3/4"	1
X4FK4 0 07 E 0	EPDM	3/4"	1
X4FK4 0 09 N 0	NBR	1"	1
X4FK4 0 09 V 0	FKM	1"	1
X4FK4 0 09 E 0	EPDM	1"	1

KIT - OPK06 / OPK07

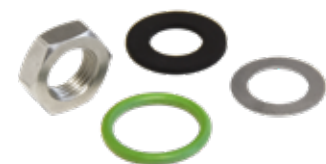
WET-PROOF KIT IN FKM - 2/2 NC



Code	Sealing materials	Coil and armature tube Ø	Pack.
OPK06 VT B2 NC 22	FKM	22 mm - Ø 10 mm	1
OPK06 VT B2 NC 30	FKM	30 mm - Ø 10 mm	1
OPK07 VT B2 NC 30	FKM	30/36 mm - Ø 13 mm	1

KIT - OPK12

WET-PROOF KIT IN FKM - 3/2 NC - 1/8" CONICAL



Code	Sealing materials	Coil and armature tube Ø	Pack.
OPK12 VT B3 NC 00	FKM	30/36 mm - Ø 13 mm	1

90985

ANALOG TIMER DIN43650A



Code	Pack.
90985 00 001	1
	min max
 Temperature	+14°F -10 °C +122°F +50 °C



Features

- 24 - 240V AC/DC
- IP65 - EN6052
- 1 A Max
- 0.5 - 10 Sec. ON
- 0.5 - 45 Min. OFF
- Reset/Test

90987

DIGITAL TIMER DIN43650A



Code	Voltage	Power consumption	Pack.
90987 00 001	7 - 36V AC/DC	20mA MAX	1
90987 00 002	110 - 240V AC/DC	10mA MAX	1
		min max	
 Temperature		+14°F -10 °C +158°F +70 °C	



Features

- Insulation Voltage: 100V AC - 1 minute
- Insulation Resistance: 50MΩ (500VDC)
- IP65 - EN6052
- Output Corrent: 1.5 A Max
- 1 Sec. - 100 Hours -> ON
- 1 Sec. - 100 Hours -> OFF
- 4 DIGIT: Mode/Add/Enter/Reset

VAL04

DEMO CASE



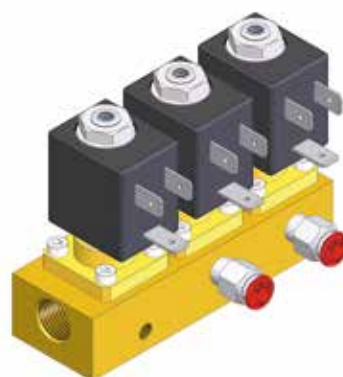
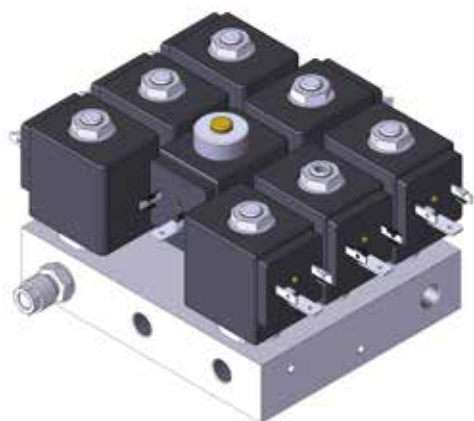
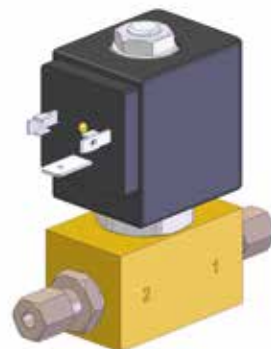
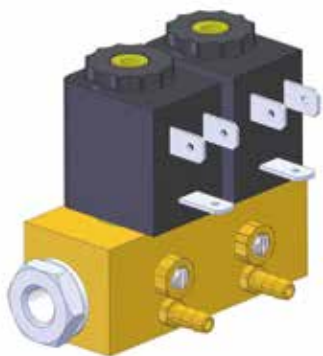
Code	Pack.
VAL04	1

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SPECIAL EXECUTIONS ON REQUEST

Special executions

By "special executions" it means all that products having complex constructions suitable for optimizing the operation of the application. The added value that Aignep offers is to propose and develop customized solutions to satisfy the most demanding requests of our Customers who operates in many industrial sectors. Finding the solution is our strength and below are proposed some "special executions" we have realized.



Serie Infinity

Distribution system for compressed air, inert gases and vacuum



[Request Catalogue](#)



Serie 50000 Push-In Fittings



Serie 55000 Technopolymeric Push-In Fittings



Serie 57000 Metallic Push-In Fittings



Serie 40000V Metallic Push-In Fittings with FKM seal



Serie Inox Push-In Fittings, Push-On Fittings, Compression Fittings, Quick Couplings, Adapters, Ball Valve, Solenoid Valves And Function Fittings



Serie Inch - 85000 Technopolymeric push-in Fittings - Inch



Serie Inch - 89000 Metallic Push-In Fittings for Inch Tube



Serie 58000 High pressure Push-In fittings



Serie Adapters Nickel-Plated Brass adaptors



Serie Tubes Plastic Tubes



Serie Quick Couplings Quick Couplings and Blow Guns



Serie Compression Fittings Compression Fittings, Double Cone Fittings and Universal Fittings



Product Range

Serie 53000

PPSU Push-In Fitting CW510L



Serie 53000X

PPSU Push-In Fitting Inox 316L



Serie Foods & Drinks Push-In Fittings, Function Fittings Ball Valve, Adapters



Serie 70000 Food Grade Push-In Fittings



Serie MIST FIT High pressure Push-In fittings



Serie 1000 Push-On Fittings



Serie Function Function Fittings



Serie Ghilux Ball Valves



Serie Valves Manual, Pneumatic and Solenoid Pilot Valve



Serie Actuators Pneumatic Actuators



Serie FRL Air treatment Units



