

# SOLENOID VALVES

## Pneumax F300 | Asco/Sirai L/D/S



**Pneumax Fluid Control**  
Catalogue

Series F300

### Series F300

#### General

F300 series includes a vast range of solenoid valves in brass and stainless steel designed to control air, water, steam and all fluids that are compatible with the materials used for bodies and seals. The solenoid valves are 2 or 3-way, normally closed, normally open, general service, direct acting or servo-assisted, with connections available in NPT & BSP threads from G1/8" up to G3", with a working pressure range from vacuum to 100 bar. Solenoid valves are available with coils that conform to CESA 03 ATEX 344 certification for explosive environments. Our technical office ensures the highest standard of skill and understanding for the widest variety of applications, ensuring that the best possible solutions are found.



DIRECT  
ACTING



INDIRECT  
ACTING

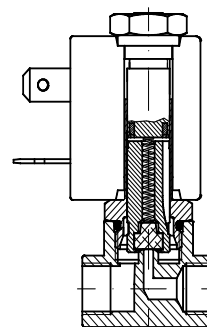
Technical modifications keep in reserve !

(2022/01)

### Version manufactured

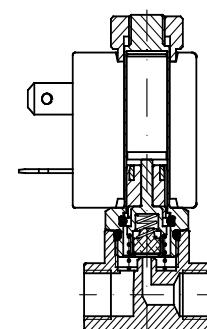
**Solenoid valves direct action 2-way:** 2-way solenoid valves have an input connection and an output connection machined in the valve body, the orifice being intercepted by the poppet moved by the core tube.

They can be **normally closed (2/2 N.C.)**, in this case the fluid is intercepted by the poppet at rest, with electricity applied, the input orifice is opened and the media reaches the intended use.



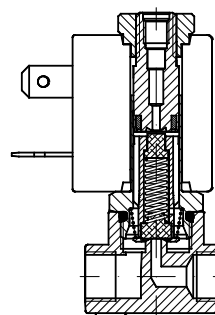
They can be **normally open (2/2 N.O.)**, in this case at rest the orifice remains open without electricity applied, the media reaches the intended use. When electricity is applied the input orifice closes.

Performance in both cases depends solely on the magnetic field produced by the solenoid coil. The solenoid valves can also work at zero pressure.



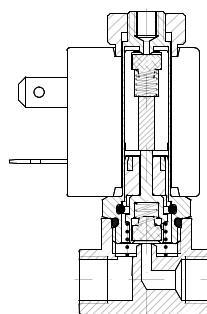
**Solenoid valves direct action 3-way:** 3-way solenoid valves have an input and an output connection in the valve body and an exhaust connection fitted in the stem of the core tube. The input and exhaust orifices are intercepted directly by the poppet fitted within the core tube.

They can be **normally closed (3/2 N.C.)** and in this case, at rest, the incoming fluid is intercepted by the poppet and output port is connected to the exhaust port. Applying electrical power, the input orifice is opened and feed is supplied to the output. Exhaust is closed.



They can be **normally open (3/2 N.O.)** and in this case, at rest, the input orifice is open without electricity applied, the media reaches the intended use. Exhaust is closed. Applying power, the input orifice closes and the output discharges through the exhaust port.

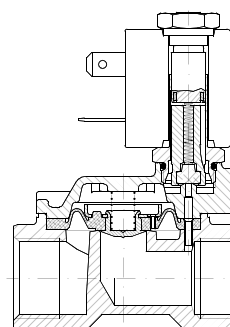
Performance in both cases depends solely on the magnetic field produced by the solenoid coil. The solenoid valves can also work at zero pressure.



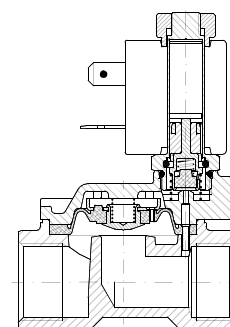
### Servo-assisted solenoid valves

Large-sized passage orifices increase the value of the static pressure which has to be overcome by the magnetic field produced by the coil. These solenoid valves are used to control high-pressure values with large diameter bores. In these models, the fluid helps in the opening or closing of the main poppet.

They can be **normally closed (2/2 N.C.)** and have an input and a utilisation connection machined into the valve body and at rest the fluid is intercepted by the main poppet, which can be either diaphragm or a piston. In this condition, the fluid acts on both faces of the main plunger through a pinhole contributing to closure of the poppet. Applying electrical power, the secondary, or pilot, orifice opens leading to the exhaust of the fluid, which acts to close the main poppet. Greater force is thus applied when opening, the poppet is raised from the orifice and allows the media to flow to the output. In these versions, performance does not depend solely on the magnetic field produced by the coil; a minimum input pressure is also needed so as to move the diaphragm or the piston overcoming its rigidity and to keep it raised from the main orifice. ( $\Delta p$  minimum performance).



They can be **normally open (2/2 N.O.)** and have an input and output connection machined into the valve body, and at rest the core tube communicates with output, a minimum-pressure difference between the feed and the output causes the main poppet to rise, leading to it opening. Applying electrical power, the secondary orifice closes and equilibrium between the pressure on the two faces of the main poppet is reinstated, and so it returns to its closed position on the main orifice. In this version a minimum working pressure is also needed.

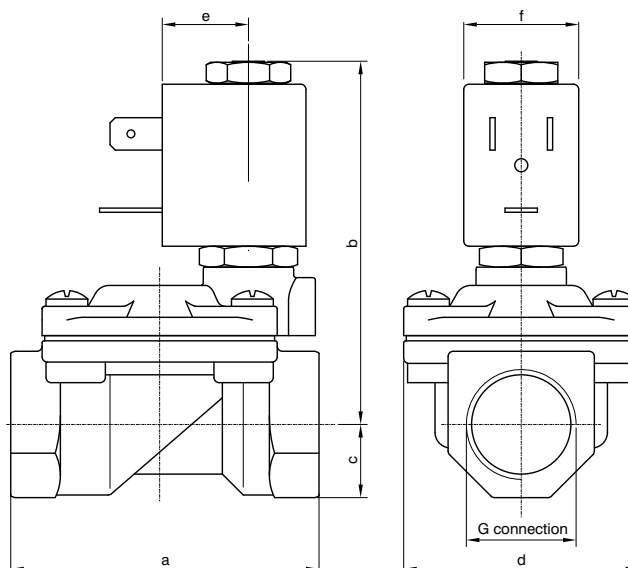


### Sealing materials

Designation	Trade names	General characteristics	Field of use
FPM (Fluorocarbon)	VITON TECNOFLON FLUOREL	A synthetic hexa-fluoropropylene-based elastomer. Excellent resistance to high temperatures. Excellent resistance to ozone, oxygen, mineral oils, synthetic hydraulic fluids, fuels, hydrocarbons and many chemical products. Not specific for superheated steam.	For general use up to 140°C



**F3107 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 1/4" ... 1" 1/4**



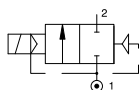
	CODE "V" = FPM seals	G connection (ISO 228) ⊕ = Connection						Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
		B	C	D	E	F	G			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
											AC	DC						
STD	F3107⊕V10⊕	1/4"	/					10	1,5	0,15	15	15	12	8	6,5	MI	22	-10 ... +140
	F3107⊕V10⊕	/	3/8"	/				10	1,7		15	15						
STD	F3107⊕V12⊕	/	3/8"	/				12	2,2		15	15						
STD	F3107⊕V12⊕	/	1/2"	/				12	2,5		15	15						
STD	F3107⊕V18⊕	/		3/4"		/		18	5,5		13	13						
STD	F3107⊕V25⊕	/			1"		/	25	10,2		10	10						
	F3107⊕V30⊕	/				1" 1/4		30	15	10	10							
G connection		a		b		c		d		e		f		Weight (g)				
1/4" Ø10		49		65		11		32		16		22		230				
3/8" Ø10		49		65		11		32						240				
3/8" Ø12		59		70		14		45						420				
1/2" Ø12		59		70		14		45						390				
3/4"		79		76		18		55						650				
1"		96		85		20		72						1050				
1" 1/4 Ø30		119		92		25		85						1700				

**N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).**

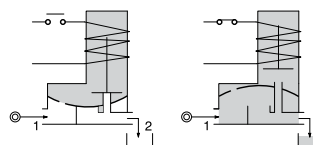
Example: F3107⊕V25⊕ => F3107FV25MI58:

2-way solenoid valve normally closed, servo-assisted diaphragm with G connection (ISO 228) 1", FPM seals, 25 mm orifice, solenoid coil 230 VAC (50-60 Hz) (MI58, size 22).

**Pneumatic symbol**



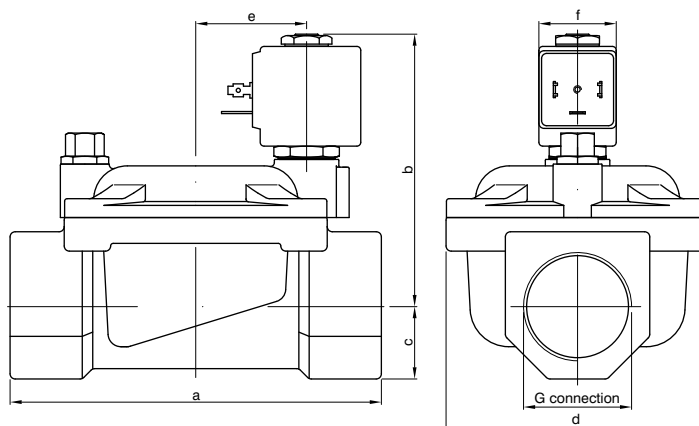
**Diagram**



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"><li>- Brass body and cover</li><li>- AISI 303 stainless steel guide tube</li><li>- AISI 430FR stainless steel mobile and fixed core</li><li>- AISI 302 stainless steel springs</li><li>- FPM sealing assemblies</li></ul> <b>OPTIONS (on request):</b> <ul style="list-style-type: none"><li>- Manual override</li><li>- Chemical nickel plating surface treatment</li><li>- Version with slowed commutation</li><li>- Version for vacuum (air/gas)</li><li>- For use with oxygen</li><li>- XME solenoid coil for potentially explosive environments to ATEX standards - Ex mb IIC</li><li>-  certified solenoid coils</li></ul>	Maximum admitted pressure (bar)	25
	Minimum differential pressure (bar)	0,15
	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	preferably with solenoid coil upwards



► F3107 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 1" 1/4 ... 3"



PNEUMAX FLUID CONTROL

CODE "V" = FPM seals "B" = NBR seals	G connection (ISO 228) ⊕ = Connection					Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	G	H	I	M	R			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
									AC	DC						
F3107⊕V37⊕	1" 1/4	/				37	18	0,15	10	10	20	15	10	MG	30	-10 ... +140
F3107⊕V37⊕	/	1" 1/2	/			37	21		10	10						
F3107⊕V50⊕	/		2"	/			50		36	10						
F3107⊕B75⊕	/		2" 1/2		/	75	75	0,3	5	5	20	15	10	MG	30	-10 ... +90
F3107⊕B75⊕	/				3"	75	84		5	5						

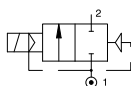
G connection	a	b	c	d	e	f	Weight (g)
1" 1/4	142	105	28	102	21	30	3000
1" 1/2	142	105	28	102			2850
2"	158	115	35	119			4300
2" 1/2	226	134	51	169			1170
3"	226	134	51	169			9900

N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).

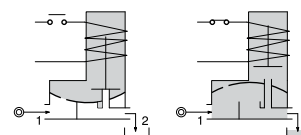
Example: F3107⊕V37⊕ => F3107GV37MG5:

2-way solenoid valve normally closed, servo-assisted diaphragm with G connection (ISO 228) 1" 1/4, FPM seals, 37 mm orifice, solenoid coil 24 VDC (MG5, size 30).

Pneumatic symbol



Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"><li>- Brass body and cover</li><li>- AISI 303 stainless steel guide tube</li><li>- AISI 430FR stainless steel mobile and fixed core</li><li>- AISI 302 stainless steel springs</li><li>- FPM sealing assemblies (NBR only for "M" and "R" versions)</li></ul> <b>OPTIONS (on request):</b> <ul style="list-style-type: none"><li>- Manual override</li><li>- Chemical nickel plating</li><li>- Version for vacuum (air/gas)</li><li>-  certified solenoid coils</li></ul>	Maximum admitted pressure (bar)	20
	Minimum differential pressure (bar)	0,15 ... 3
	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	preferably with solenoid coil upwards

Coils see page 7.02.09  
Connectors see page 7.02.20  
Timer see page 7.02.20

ORDER EXAMPLE  
F3107DV12 MI5-24VDC MP1

Valve + Coil + Connector



**ASCO**

# SOLENOID VALVE

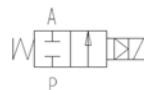
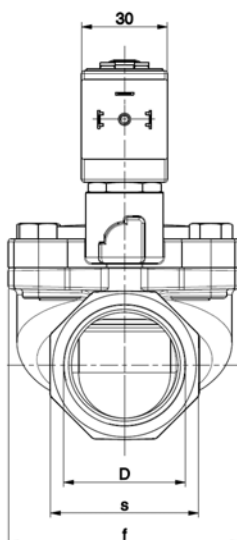
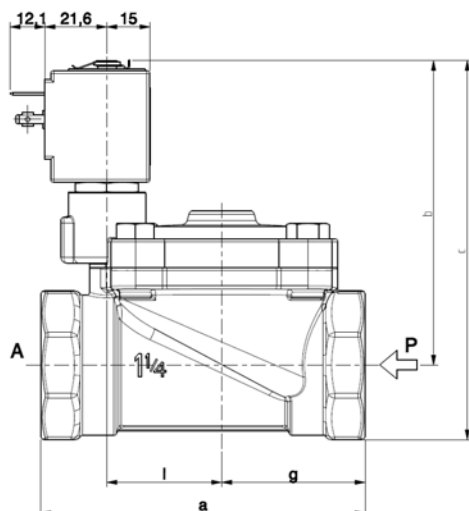
## 2/2 - NC (Normally closed)

### Pilot operated

### G1 ¼ ÷ 2

**L182-BIG**

G 1" ¼ ÷ 2"



D	a	b	c	f	g	l	s
G 1 ¼	113	106	132	81	50	40	52
G 1 ½	140	110	140	110	64	53	60
G 2	157	114	150	110	72	53	72

**► GENERAL FEATURES**

Diaphragm valve, pilot operated, having full orifice.  
 Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with materials in contact).  
 Not suitable for use with dangerous fluids listed in Group 1, therefore they are free from CE marking in conformity with article 3 § 3 of the European Directive 97/23/EC (Pressure Equipment Directive).

**► TECHNICAL FEATURES**

Maximum allowable pressure (PS) 15 bar

**Response times**

Opening time (ms)

Closing time (ms)

Fluid temperature

Max viscosity

	1 1/4	1 1/2	2
Opening time (ms)	100	360	360
Closing time (ms)	650	650	650

-10°C +90°C (NBR)

0°C +130°C (FPM)

5°E (~37 cStokes or mm²/s)

**► MATERIALS IN CONTACT WITH FLUID**

Body	Brass
Sealing	Diaphragm: NBR or FPM / Actuator: FPM
Internal components	Brass and stainless steel
Seat	Brass
Guide assembly	Stainless steel
Shading ring	Copper

**► COIL**

Approval	UL (class F) – for UL cl.H: ZA34
Continuous duty	ED 100%
Encapsulation material	PPS (Polyphenylsulfure) fiberglass reinforced
Coil insulation class	F (155°C) on request class H (180°C)
Ambient temperature	-10°C +50°C
Electric connections	DIN 46340 - 3 poles connectors (EN175301-803)
Protection degree	IP 67 (EN 60529) with plug connector
Voltages DC	12-24V (+10% -5%)
AC	24V/50Hz - 110V/50Hz (120V/60Hz) - 230V/50Hz (+10% -15%)
	(Other voltages and frequencies on request)

Port size ISO 228	Orifice size. (mm)	Differential pressure (bar)						Kv (m³/h)	Series and type			Power absorption			Sealings	Notes	Weight (kg)
		Δp min	Δp max				AC (VA)					DC (W)					
			Gases		Liquids		Inrush		Holding								
		AC	DC	AC	DC												
G 1 ¼	30	0,50	10	10	10	10	15	L182B48	L182B49	ZA10A	23	14	9	NBR (diaphragm) FPM (actuator)	-	1,590	
G 1 ½	45						27									2,510	
G 2	45						34									2,990	
G 1 ¼	30						15	L182V48	L182V49					2,990			
G 1 ½	45						27									2,510	
G 2	45						34									2,990	

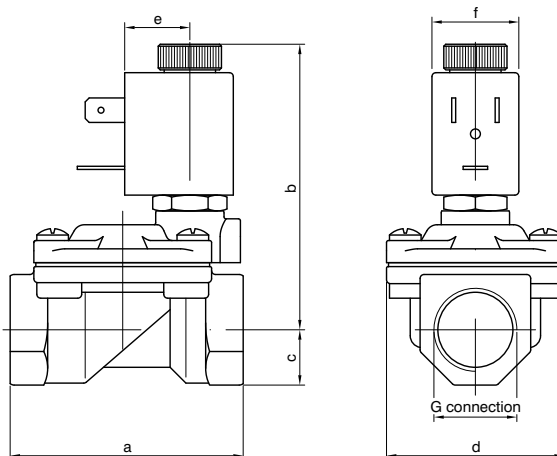
**► NOTES**

- Sealings : NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer
- Operation with gaseous fluids at high pressure without any outlet restriction can reduce the diaphragm life.
- IMQ CSV approval, see ZA10 datasheet for further details
- UL approved coil (E153691)





**F3207 - 2-way solenoid valve N.O. brass body and cover, with G connection (ISO 228) - 1/4" ... 1" 1/4**



CODE "V" = FPM seals	G connection (ISO 228) ⊕ = Connection						Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	B	C	D	E	F	G			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
<b>F3207⊕V10⊕</b>	1/4"			/			10	1,5	0,15	15	15	12	8	6,5	MI	22	-10 ... +140
<b>F3207⊕V10⊕</b>	/	3/8"		/			10	1,7		15	15						
<b>F3207⊕V12⊕</b>	/	3/8"		/			12	2,2		15	15						
<b>F3207⊕V12⊕</b>	/	1/2"		/			12	2,5		15	15						
<b>F3207⊕V18⊕</b>	/		3/4"	/			18	5,5		13	13						
<b>F3207⊕V25⊕</b>	/				1"	/	25	10,2		10	10						
<b>F3207⊕V30⊕</b>	/					1" 1/4	30	15		10	10						

STD  
STD  
STD

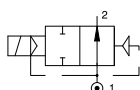
G connection	a	b	c	d	e	f	Weight (g)
1/4" Ø10	49	65	11	32	16	22	230
3/8" Ø10	49	65	11	32			240
3/8" Ø12	59	73	14	45			420
1/2" Ø12	59	73	14	45			390
3/4"	79	76	18	55			650
1"	96	85	20	72			1050
1" 1/4 Ø30	119	96	25	85			1700

**N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).**

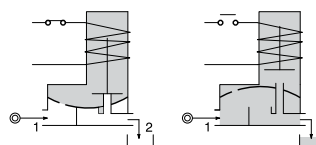
Example: F3207⊕V10⊕ => F3207CV10MI58:

2-way solenoid valve normally open, servo-assisted diaphragm, with G connection (ISO 228) 1/4", FPM seals, 10 mm orifice, solenoid coil 230 VAC (50-60 Hz) (MI58, size 22).

**Pneumatic symbol**



**Diagram**



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"> <li>- Brass body and cover</li> <li>- AISI 303 stainless steel guide tube</li> <li>- AISI 430FR stainless steel mobile and fixed core</li> <li>- AISI 302 stainless steel springs</li> <li>- FPM sealing assemblies</li> </ul> <b>OPTIONS (on request):</b> <ul style="list-style-type: none"> <li>- Manual override</li> <li>- Chemical nickel plating surface treatment</li> <li>- XME solenoid coil for potentially explosive environments to ATEX standards - Ex mb IIC</li> <li>-  certified solenoid coils</li> </ul>	Maximum admitted pressure (bar)	25
	Minimum differential pressure (bar)	0,15
	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	preferably with solenoid coil upwards

Coils see page 7.02.09  
Connectors see page 7.02.20  
Timer see page 7.02.20

**ORDEREXAMPLE**  
**F3207DV12 MI5-24VDC MP1**

Valve + Coil + Connector

Technical modifications keep in reserve !

(2022/01)

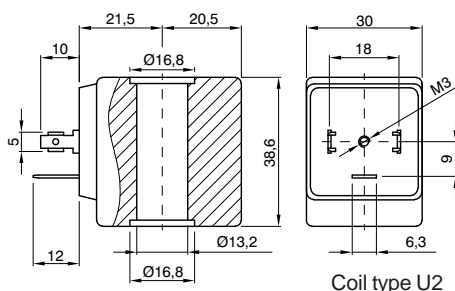


## Solenoid coil 30 mm Ø13, type MG



### Options:

- Electrical connection via cables
- Special voltages and powers
- Self-extinguish



Coil type U2

### Ordering code

**MG**

#### VOLTAGE

4= 12 VDC	STD
5= 24 VDC	STD
56= 24 VAC (50-60 Hz)	STD
57= 110 VAC (50-60 Hz)	
58= 230 VAC (50-60 Hz)	STD

**EAC**

### Operational characteristics

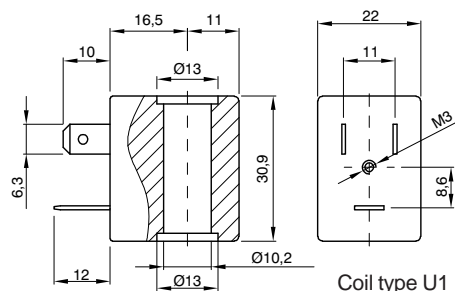
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power	Weight (g)
F	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 A	Code: 300.11.00	AC (VA) 15	DC (W) 10
								120

## Solenoid coil 22 mm Ø10, type MI



### Options:

- Electrical connection via cables
- Special voltages and powers
- Self-extinguish



Coil type U1

### Ordering code

**MI**

#### VOLTAGE

4= 12 VDC	STD
5= 24 VDC	STD
21= 48-50 VAC (50-60 Hz)	STD
56= 24 VAC (50-60 Hz)	STD
57= 110 VAC (50-60 Hz)	
58= 230 VAC (50-60 Hz)	STD

**EAC**

### Operational characteristics

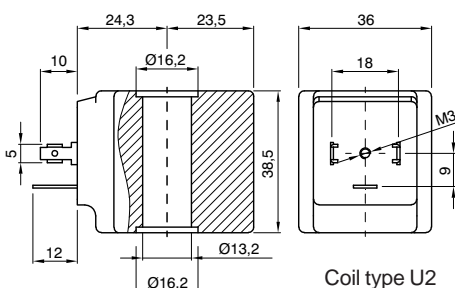
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power	Weight (g)
F	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 B	Code: 305.11.00	AC (VA) 8	DC (W) 6,5
								50

## Solenoid coil 36 mm Ø13, type MK



### Options:

- Electrical connection via cables
- Special voltages and powers
- Self-extinguish



Coil type U2

### Ordering code

**MK**

#### VOLTAGE

4= 12 VDC	STD
5= 24 VDC	STD
56= 24 VAC (50-60 Hz)	STD
57= 110 VAC (50-60 Hz)	
58= 230 VAC (50-60 Hz)	STD

**EAC**

### Operational characteristics

Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power	Weight (g)
H	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 A	Code: 300.11.00	AC (VA) 30	DC (W) 27
								200

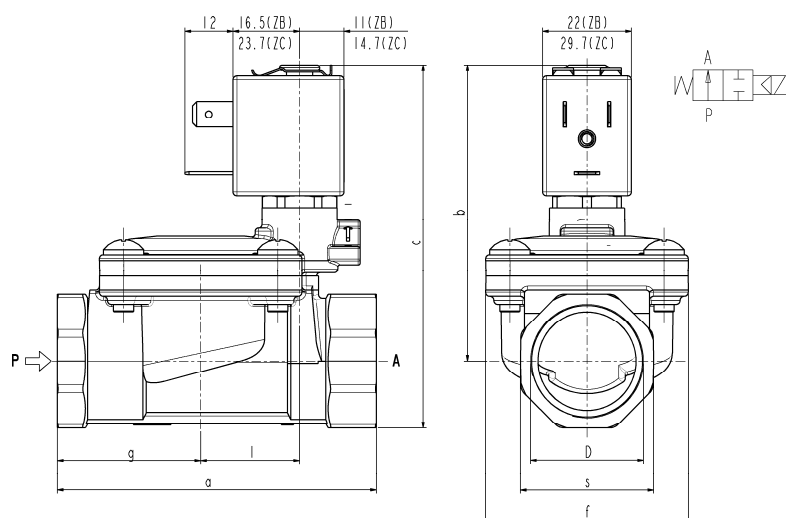
Coils see page 7.02.09  
Connectors see page 7.02.20  
Timer see page 7.02.20



# ASCO

## SOLENOID VALVE 2/2- NO (Normally open) Pilot operated G 3/8 ÷ G 1

# L282



D	a	b	c	f	g	l	s
G 3/8	60	67	78	40	25,5	20	22
G 1/2	66	69	83	40	29	20	27
G 3/4	79	73,5	90	50	35,5	24,5	33
G 1	105	86	107	71	46	28	42

### ► GENERAL FEATURES

Diaphragm valve, pilot operated, having full orifice.  
Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with material in contact).

### ► TECHNICAL FEATURES

Maximum allowable pressure (PS)	20bar
Opening time	from ~300ms to ~1500ms
Closing time	from ~1000ms to ~2000ms
Fluid temperature	-10°C +90°C (NBR) 0°C +130°C (FPM)
Max viscosity	5°E (~37 cStokes or mm²/s)

### ► MATERIALS IN CONTACT WITH FLUID

Body	Brass
Sealing	NBR or FPM
Internal components	Brass and stainless steel
Seat	Brass
Core tube	Stainless steel
Shading coil	Copper

### ► COIL

Approval

Encapsulation material

Insulation class

Ambient temperature

Continuous duty

Electric connection

Protection degree

Voltages DC  
AC

ZB10K ZC10A	ZB12K ZC12A	ZB14K ZC14A
/	▲ UL and CSA	▲ UL and CSA
PA fiberglass reinforced F (155°C) -10°C +60°C	PET fiberglass reinforced F (155°C) -10°C +60°C	PET fiberglass reinforced H (180°C) -10°C +75°C
ED 100%		
DIN 46340- 3 poles plug connector (EN 175301-803 for ZC)		
IP 65 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector
ZC: 12-24V (+10% -5%)		
ZB: 24V/50-60Hz - 120V/60Hz - 230V/50-60Hz - 220-230/50Hz 208-240/60Hz (on request) - (+10% -15%)		
(Other voltages and frequencies on request)		

▲ : approval valid for ZB12K – ZB14K only

Port size ISO 228	Orifice size (mm)	Differential pressure (bar)				Kv (m³/h)	Series and type		Power absorption				Sealings	Notes	Weight (kg)			
		Δp min	Δp max						AC (VA)							DC		
			Gas		Liquids		Inrush		Holding									
			AC	DC	AC						DC	VA					VA	W
3/8	13,5	0,35	12	-	12	-	2,5	L282B01 L282V01 L282B01 L282V01	ZB10K ZB12K	11,7	10	7,6	-	NBR	-	0,32		
1/2														FPM		0,38		
3/4														18		5	NBR	0,52
1	24													10		12	12	FPM
3/8	13,5		-	12	-	12	-	2,5	L282B01 L282V01 L282B01 L282V01	ZC10A ZC12A	-	-	-	5,5	NBR	-	0,32	
1/2															FPM		0,38	
3/4															18		5	NBR
1	24														10		12	12

### ► NOTES

- Sealings: NBR=Nitrile-butylene elastomer FPM=Fluoro-carbon elastomer
- Operation with gaseous media, at high pressure without any outlet restriction, can reduce the diaphragm life.
- On request coil in class H (ZB14K – ZC14A - see § "COIL")
- On request **WRAS** certified solenoid valve with EPDM sealing (certificate n° 1411048).

Technical modifications keep in reserve !

(2021/09)

**ASCO**

# SOLENOID VALVE

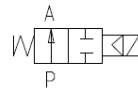
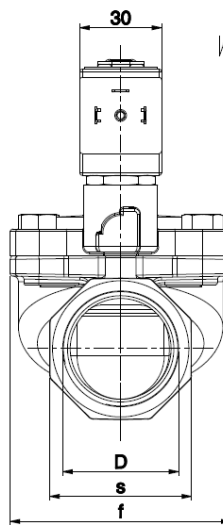
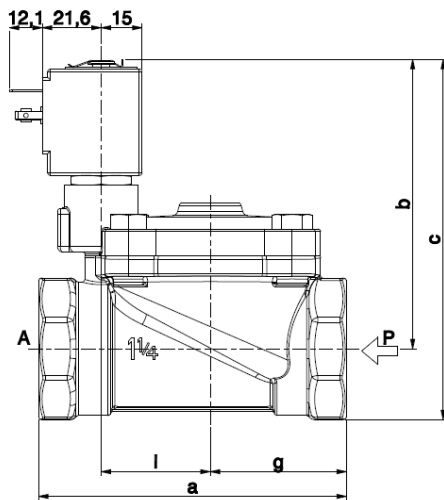
## 2/2 - NO (Normally open)

### Pilot operated

### G1 ¼ ÷ 2

**L282-BIG**

G 1" ¼ ÷ 2"



D	a	b	c	f	g	l	s
G 1 ¼	113	106	132	81	50	40	52
G 1 ½	140	110	140	110	64	53	60
G 2	157	114	150	110	72	53	72

**► GENERAL FEATURES**

Diaphragm valve, pilot operated, having full orifice.  
 Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with materials in contact).  
 Not suitable for use with dangerous fluids listed in Group 1, therefore they are free from CE marking in conformity with article 3 § 3 of the European Directive 97/23/EC (Pressure Equipment Directive).

**► TECHNICAL FEATURES**

Maximum allowable pressure (PS)	15 bar
Opening time	from ~300ms to ~1500ms
Closing time	from ~1000ms to ~2000ms
Fluid temperature	-10°C +90°C (NBR) 0°C +130°C (FPM)
Max viscosity	5°E (~37 cStokes or mm²/s)

**► MATERIALS IN CONTACT WITH FLUID**

Body	Brass
Sealing	NBR or FPM
Internal components	Brass and stainless steel
Seat	Brass
Guide assembly	Stainless steel
Shading ring	Copper

**► COIL**

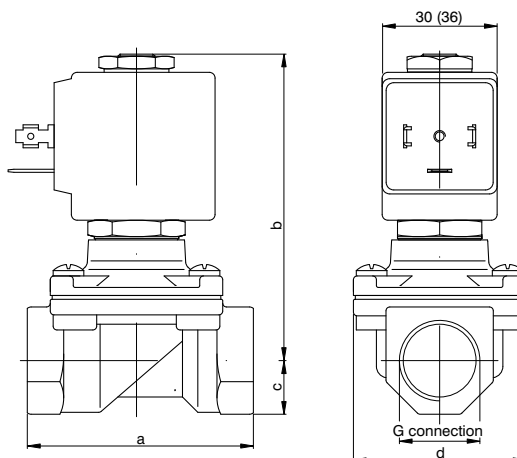
Approval	UL (class F) – for UL cl.H: ZA34
Continuous duty	ED 100%
Encapsulation material	PPS (Polyphenylsulfure) fiberglass reinforced
Coil insulation class	F (155°C) on request class H (180°C)
Ambient temperature	-10°C +50°C
Electric connection	DIN 46340 - 3 poles connector (EN175301-803)
Protection degree	IP 67 (EN 60529) with plug connector
Voltages	DC AC
	<b>ZA10A:</b> 12-24V (+10% -5%) <b>ZA10YE:</b> 24V/50Hz - 110V/50Hz (120V/60Hz) - 230V/50Hz (+10% -15%) (Other voltages and frequencies on request)

Port size ISO 228	Orifice size (mm)	Differential pressure (bar)				Kv (m³/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)								
		Δp min	Δp max						AC (VA)		DC (W)											
			Gases		Liquids		Inrush	Holding														
			AC	DC	AC				DC													
G 1 ¼	30	0.50	10	-	10	-	15	L282B48	ZA10Y	28	20	-	NBR (diaphragm) FPM (actuator)	-	1,590							
G 1 ½	45		9	-	9	-	27								2,510							
G 2	45						34								2,990							
G 1 ¼	30		10	-	10	-	15								L282V48	ZA10Y	28	20	-	FPM	-	1,590
G 1 ½	45		9	-	9	-	27															2,510
G 2	45						34															2,990
G 1 ¼	30		-	10	-	10	15	L282B48	ZA10A	-	-	9	NBR (diaphragm) FPM (actuator)	-	1,590							
G 1 ½	45		-	9	-	9	27								2,510							
G 2	45						34								2,990							
G 1 ¼	30		-	10	-	10	15	L282V48							ZA10A	-	-	9	FPM	-	1,590	
G 1 ½	45		-	9	-	9	27														2,510	
G 2	45						34														2,990	

**► NOTE**

- Sealings : NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer
- Operation with gaseous fluids at high pressure without any outlet restriction can reduce the diaphragm life.
- IMQ CSV approval, see ZA10 datasheet for further details
- UL approved coil (E153691)

► F3108 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 3/8" ... 1"



The data in brackets refer to the MK Series coil

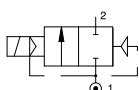
	CODE "V" = FPM seals	G connection (ISO 228) ⊕ = Connection				Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
		C	D	E	F			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
									AC	DC						
STD	F3108⊕V12⊕	3/8"	/			12	2	0	10	/	20	15	/	MG/AC	30	-10 ... +140
STD	F3108⊕V12⊕	/	1/2"	/		12	2,2		10	/						
STD	F3108⊕V12⊕	3/8"	/			12	2		12	10	40	30	27	MK (AC/DC)	36	
STD	F3108⊕V12⊕	/	1/2"	/		12	2,2		12	10						
STD	F3108⊕V18⊕	/		3/4"	/	18	4,5		9	/	40	30	/	MK/DC	36	
STD	F3108⊕V25⊕	/			1"	25	8,5		7	/						
STD	F3108⊕V18C⊕	/		3/4"	/	18	4,5		/	9	/	/	27	MK/DC	36	
STD	F3108⊕V25C⊕	/			1"	25	8,5		/	8						
G connection		a		b		c		d		Weight (g)						
										MG	MK					
3/8"		59		83		14		45		520	600					
1/2"		59		83		14		45		490	570					
3/4"		79		90		18		55		/	810					
1"		96		101		20		72		/	1220					

N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).

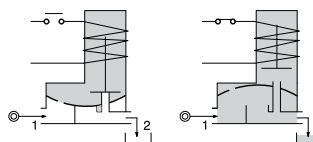
Example: F3108⊕V12⊕ => F3108CV12MG5:

2-way solenoid valve normally closed, with assisted-lift diaphragm with G connection (ISO 228) 3/8", FPM seals, 12 mm orifice, solenoid coil 24 VDC (MG5, size 30).

Pneumatic symbol



Diagram



Construction characteristics	Technical characteristics	
- Brass body and cover - AISI 303 stainless steel guide tube - AISI 430FR stainless steel mobile and fixed core - AISI 302 stainless steel springs - FPM sealing assemblies	Maximum admitted pressure(bar)	25
<b>OPTIONS (on request):</b> - Chemical nickel plating -  certified solenoid coils	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Ambient temperature: with class H solenoid coil (°C)	-10 ... +80
	Mounting position	preferably with solenoid coil upwards

Coils see page 7.02.09  
Connectors see page 7.02.20  
Timer see page 7.02.20

**ORDER EXAMPLE**  
**F3108DV12 MG5-24VDC MP2**

Valve + Coil + Connector

Technical modifications keep in reserve !

(2022/01)

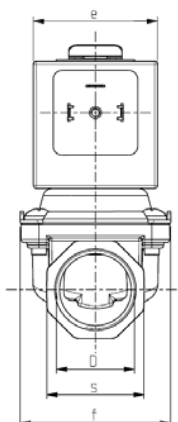
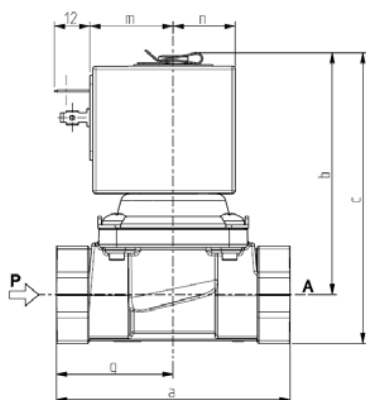
**ASCO**

# SOLENOID VALVE

## 2/2 - NC (Normally closed)

### Pilot operated hung diaphragm

### G3/8 ÷ 1

**L133**

D	a	b	c	e	f	m	n	s	g
G 3/8	60	67,5	78,7	30	40,2	21,6	15*	22	25,5
G 1/2	66	67,5	78,7	30	40,2	21,6	15*	27	-
G 3/4	79	81	98	42	51	28	21	33	-
G 1	105	100	121	48,6	71	35	24,3	42	46

\*Only for ZA10B n=19,9

**► GENERAL FEATURES**

Pilot operated hung diaphragm valve with full orifice.  
Designed for closed circuit hydraulic systems and for vessels draining.  
Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with materials in contact).

**► TECHNICAL FEATURES**

Maximum allowable pressure (PS)	16 bar
Opening time	from ~100ms to ~150ms
Closing time	from ~100ms to ~400ms
Fluid temperature	-10°C +90°C (NBR) 0°C +130°C (FPM) -10°C +140°C (EPDM)
Max viscosity	5°E (~37 cStokes or mm²/s)

**► MATERIALS IN CONTACT WITH FLUID**

Body	Brass
Sealing	NBR or FPM or EPDM
Internal components	Stainless steel and PPS (G3/8 – G1/2) Stainless steel and brass (G3/4 – G1)
Seat	Brass
Core tube	Stainless steel
Shading coil	Copper (except L133(*)17)

**► COIL**

Approval

Continuous duty

Encapsulation material

Insulation class

Ambient temperature

Electric connections

Protection degree

Voltages

DC

AC

ZA10A	ZA10B	Z130A	Z923A/E
UL (class F) – for UL cl.H: ZA34*		-	
ED 100%			
PPS (Polyphenilsulfure) fiberglass reinforced	PET (polyethylene terephthalate) fiberglass reinforced		PPS (Polyphenilsulfure) fiberglass reinforced
F (155°C) on request class H (180°C)		F (140°C) on request class H (165°C)	H (165°C)
-10°C +50°C		-10°C +60°C	-10°C +80°C
DIN 46340 - 3 poles connectors (EN175301-803)			
IP 67 (EN 60529) with plug connector	IP 65 (EN 60529) with plug connector		
12-24V (+10% -5%)			
24V/50Hz-110V/50Hz(120V/60Hz) - 230V/50Hz (+10% -15%)			
(Other voltages and frequencies on request)			

\* only for ZA10A

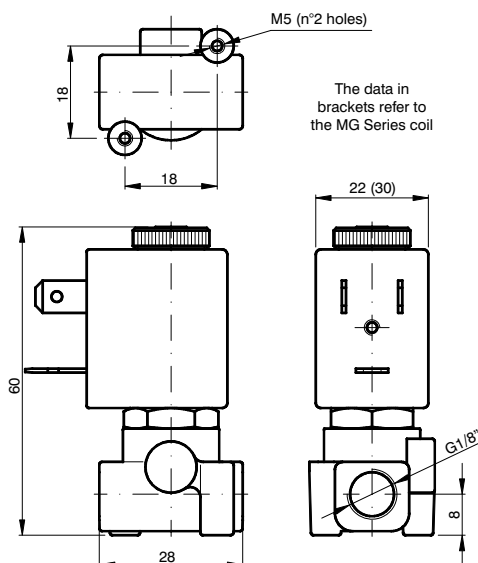
Port size ISO 228	Orifice size (mm)	Differential pressure (bar)						Kv (m³/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)
		Δp min	Δp max				AC (VA)				DC					
			Gas		Liquids		Valve		Coil	Inrush		Holding				
			AC	DC	AC	DC					W					
G3/8	12.5	0	10	3	10	3	2	L133(*)16	ZA10A	23	14	9	(*) = B (NBR)	1	0.340	
			-	8	-	8		L133(*)17	ZA10B	-	-	10	(*) = V (FPM)	-	0.350	
G1/2			10	3	10	3	2.2	L133(*)16	ZA10A	23	14	9	(*) = D (EPDM)	1	0.410	
			-	8	-	8		L133(*)17	ZA10B	-	-	10			0.420	
G3/4	17		10	3	10	3	4.5	L133(●)07	Z130A	44	24	13	(●) = B (NBR)	-	0.790	
G1	24		10	-	10	-	9	L133(●)06	Z923E	65	33	-	(●) = V (FPM)		1.810	
			-	3	-	3			Z923A	-	-	17				

**► NOTES**

- Sealings : NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer EPDM = Ethylene-propylene elastomer
- The nominal flow is guaranteed with Δp min ≥ 0,3 bar. Contact us in case of lower Δp min values.
- UL approved coil (E153691)
- 1 - IMQ CSV approval, see ZA10 datasheet for further details



**F3105 - 2-way solenoid valve N.C. brass body, with G connection (ISO 228) - 1/8"**



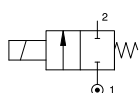
CODE "V"= FPM seals	G connection (ISO 228) ⊕= Connection	Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕= Solenoid coil		Temperature range (°C)
	A			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
					AC	DC						
F3105⊕V12⊕	1/8"	1,2	0,04	0	25	25	12	8	6,5	MI	22	-10 ... +140
F3105⊕V15⊕		1,5	0,06		16	16						
F3105⊕V20⊕		2	0,09		12	10						
F3105⊕V25⊕		2,5	0,14		8	5,5						
F3105⊕V31⊕		3,1	0,19		5	2						
F3105⊕V40⊕	4	0,35	4		1,5	15	11	5	MG	30		
F3105⊕V20⊕	2	0,09	25		15							
F3105⊕V25⊕	2,5	0,14	16		8							
F3105⊕V31⊕	3,1	0,19	8		4							
F3105⊕V40⊕	4	0,35	5		2,5							

**N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).**

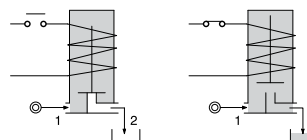
Example: F3105⊕V25⊕ => F3105AV25MI58:

2-way solenoid valve normally closed, direct acting poppet type with G connection (ISO 228) 1/8", FPM seals, orifice 2,5 mm, solenoid coil 230 VAC (50-60 Hz) (MI58, size 22).

Pneumatic symbol



Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"><li>- Brass body</li><li>- Brass guide tube</li><li>- AISI 430FR stainless steel mobile and fixed core</li><li>- AISI 302 stainless steel springs</li><li>- FPM sealing assemblies</li></ul> <b>OPTIONS (on request):</b> <ul style="list-style-type: none"><li>- Manual override</li><li>- Chemical nickel plating surface treatment</li><li>- Stainless steel guide tube</li><li>- For use with oxygen</li><li>- XME solenoid coil for potentially explosive environments to ATEX standards - Ex mb IIC</li><li>-  certified solenoid coils</li><li>- Versions for use with fluid temperature at -40°C</li></ul>	Maximum admitted pressure (bar)	50
	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	indifferent
	Weight (g) with solenoid coil MI series	130
	Weight (g) with solenoid coil MG series	180

Coils see page 7.02.09  
Connectors see page 7.02.20  
Timer see page 7.02.20

**ORDEREXAMPLE**  
**F3105AV25 MI5-24VDC MP1**

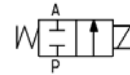
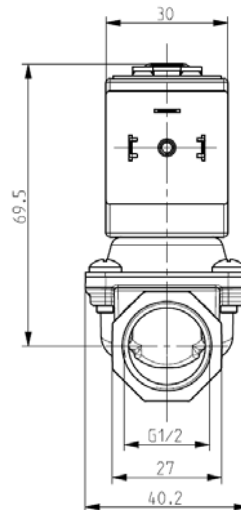
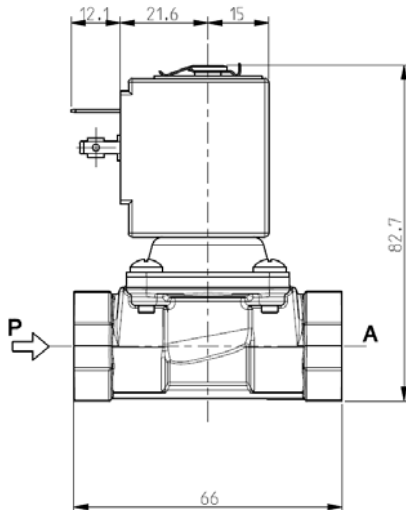
Valve + Coil + Connector

Technical modifications keep in reserve !

(2024/02)

**ASCO**

**SOLENOID VALVE**  
**2/2 - NC (Normally closed)**  
**Direct acting**  
**G 1/2**

**L113****► GENERAL FEATURES**

Direct acting solenoid valve with full orifice, for low pressure.  
 Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with materials in contact).

**► TECHNICAL FEATURES**

*Maximum allowable pressure (PS)* 2 bar  
*Opening time* ~30ms  
*Closing time* ~30ms  
*Fluid temperature* 0°C +130°C  
*Max viscosity* 5°E (~37 cStokes or mm<sup>2</sup>/s)

**► MATERIALS IN CONTACT WITH FLUID**

*Body* Brass  
*Sealing* FPM  
*Internal components* Stainless steel and brass  
*Seat* Brass  
*Core tube* Stainless steel  
*Shading coil* Copper

**► COIL**

*Continuous duty* ED 100%  
*Encapsulation material* PPS (Polyphenylsulfure) fiberglass reinforced  
*Insulation class* F (155°C) on request class H (180°C) – UL (vd. ZA34A)  
*Ambient temperature* -10°C +50°C  
*Electric connections* DIN 46340 - 3 poles connectors (EN175301-803)  
*Protection degree* IP 67 (EN 60529) with plug connector  
*Voltages* DC 12-24V (+10% -5%)  
 AC 24V/50Hz - 110V/50Hz (120V/60Hz) - 230V/50Hz (+10% -15%)  
 (Other voltages and frequencies on request)

Port size ISO 228	Orifice size (mm)	Differential pressure (bar)					Kv (m³/h)	Series and type		Power absorption			Sealings	Function Notes	Weight (kg)
		Δp min	Δp max							AC (VA)		DC (W)			
			Gases		Liquids			Inrush	Holding						
			AC	DC	AC	DC									
G 1/2	12	0	0,30	-	0,30	-	2	L113V22	ZA10A	23	14	-	FPM	1	0,390
			-	0,20	-	0,20		L113V23		-	-	9		1 - 2	

**► NOTES**

- Sealings : FPM = Fluoro-carbon elastomer  
 1 - IMQ CSV approval, see ZA10 datasheet for further details  
 2 - Silent model; only for direct current (DC).

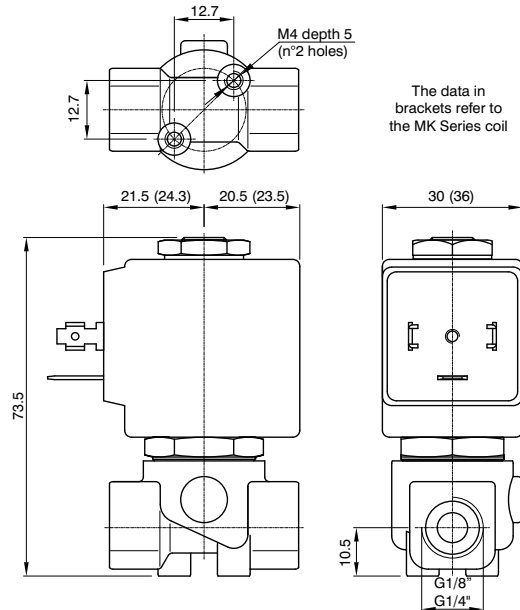
**ORDER EXAMPLE**  
**L113V22-1/2" ZA10A-24VAC MP2**

Valve + Coil + Connector





► F3106 - 2-way solenoid valve N.C. brass body, with G connection (ISO 228) - 1/8" and 1/4"



STD

STD

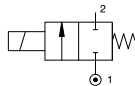
CODE "V" = FPM seals	G connection (ISO 228) ⊕ = Connection		Orifice (mm)	KV (m³/h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	A	B			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
F3106⊕V10⊕	1/8"	1/4"	1	0,04	0	80	80	20	15	10	MG	30	-10 ... +140
F3106⊕V12⊕			1,2	0,05		60	60						
F3106⊕V15⊕			1,5	0,07		30	26						
F3106⊕V20⊕			2	0,1		22	20						
F3106⊕V25⊕			2,5	0,15		16	14						
F3106⊕V30⊕			3	0,25		15	10						
F3106⊕V35⊕			3,5	0,32		10	8						
F3106⊕V40⊕			4	0,36		8	5						
F3106⊕V45⊕			4,5	0,41		6,5	3,5						
F3106⊕V52⊕	/	5,2	0,47	4		1,8							
F3106⊕V64⊕	/	6,4	0,64	3		1							
F3106⊕V10⊕	1/8"	1/4"	1	0,04		100	100	40	30	27	MK	36	
F3106⊕V12⊕			1,2	0,05		100	100						
F3106⊕V15⊕			1,5	0,07		80	80						
F3106⊕V20⊕			2	0,1		50	40						
F3106⊕V25⊕			2,5	0,15		35	33						
F3106⊕V30⊕			3	0,25		25	24						
F3106⊕V35⊕			3,5	0,32		20	19						
F3106⊕V40⊕			4	0,36	16	15							
F3106⊕V45⊕			4,5	0,41	14	13							
F3106⊕V52⊕	/	5,2	0,47	10	9								
F3106⊕V64⊕	/	6,4	0,64	5	4,5								

N.B. For use with steam, maximum admitted pressure PS is 9 bar (relative pressure) with seals in PTFE and 2.5 bar with seals in EPDM.

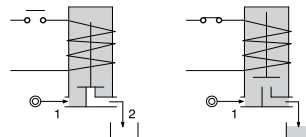
Example: F3106⊕V52⊕ => F3106BV52MG58:

2-way solenoid valve normally closed, direct acting poppet type with G connection (ISO 228) 1/4", FPM seals, 5,2 mm orifice, solenoid coil 230 VAC (50-60 Hz) (MG58, size 30).

Pneumatic symbol



Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"><li>- Brass body</li><li>- AISI 303 stainless steel guide tube</li><li>- AISI 430FR stainless steel mobile and fixed core</li><li>- AISI 302 stainless steel springs</li><li>- FPM sealing assemblies</li></ul> <b>OPTIONS (on request):</b> <ul style="list-style-type: none"><li>- Manual override</li><li>- Chemical nickel plating surface treatment</li><li>- Stainless steel seat insert (up to Ø4.5)</li><li>- For use with oxygen</li><li>-  certified solenoid coils</li><li>- Versions for use with fluid temperature at -40°C</li><li>- PTFE - EPDM seals</li></ul>	Maximum admitted pressure (bar)	100
	Maximum fluid viscosity (mm²/s)	25cSt
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Ambient temperature: with class H solenoid coil (°C)	-10 ... +80
	Mounting position	indifferent
	Weight (g) with solenoid coil MG series	300
	Weight (g) with solenoid coil MK series	380



## DRY VALVES (Total Separation) Series D

### Description:

Dry valves are needed in applications where it must be avoided that the controlled liquid or gaseous medium gets in touch with certain internal parts of the valve.

The solenoid controls the opening & closing movement by means of a lever or a diaphragm.

In the first case the lever penetrates the valve through an elastic protective sheath.

In the second case, the diaphragm is inside the valve body.

### Advantages:

- Total separation between medium & solenoid
- Direct acting
- Available in Stainless steel (AISI 316)

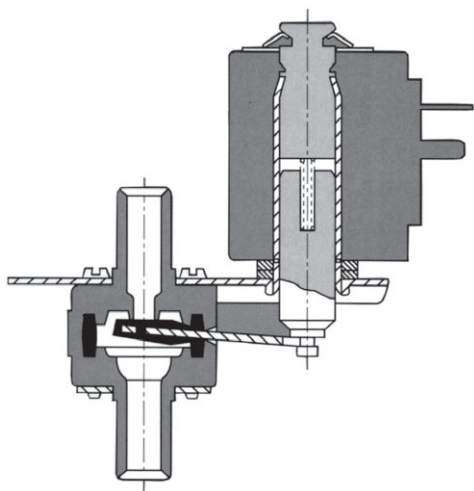
### Versions:

- Two or three way, normally closed or open
- Female or male threaded ports or hose connections
- Internal orifices Ø 1.2 to 10 mm

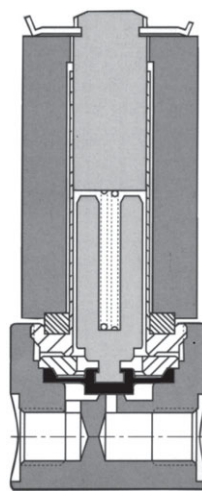
### Applications:

- Food
- Agriculture & horticulture
- Laboratory
- Paramedical installations

#### SEPARATION LEVER



#### SEPARATION DIAPHRAGM



MORE DETAILS & OTHER TYPES AVAILABLE ON REQUEST

Technical modifications keep in reserve !

(2021/09)

## PINCH VALVES Series S



### Description:

This pinch valve controls the distribution of a fluid by pinching or loosening the tube into which the fluid is flowing and NOT the fluid himself.

### Advantages:

- No contact of the fluid with metallic components
- Free total & bidirectional flow
- Quick mounting & replacement of tubing
- Absence of dead spaces (e.g. bacteria)
- Direct acting

### Attention:

The valves are suitable for soft silicon tubings or others, similar per elasticity & hardness, 55 Shore A. The tubings are not included in our supply.

### Versions:

- Two or three way, normally closed or open
- Tubing with internal orifices  $\varnothing$  0.8 to 6.4 mm and external orifices 1.7 to 9.5 mm

### Applications:

- Paramedical sector
- Laboratory (e.g. blood-test & sampling)

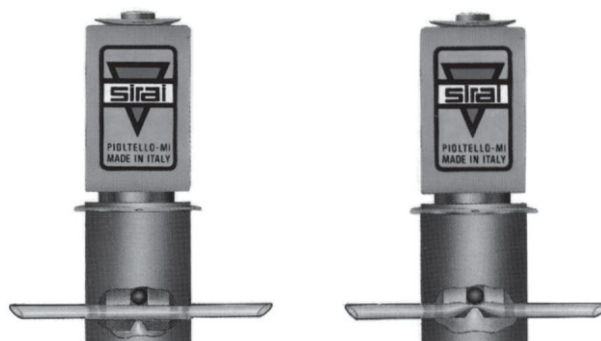
### 2-way NC



DEENERGIZED COIL

ENERGIZED COIL

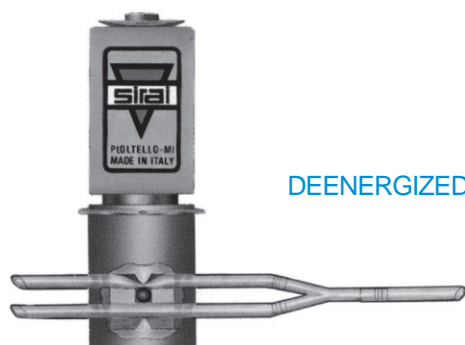
### 2-way NO



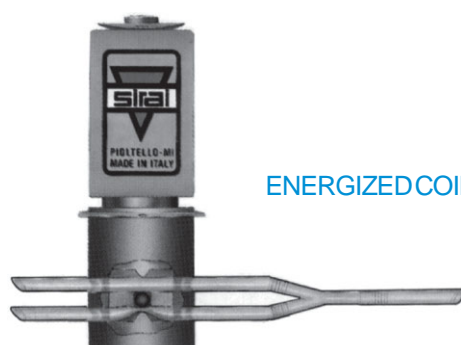
DEENERGIZED COIL

ENERGIZED COIL

### 3-way



DEENERGIZED COIL



ENERGIZED COIL

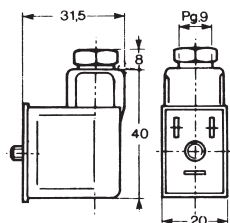
MORE DETAILS & OTHER TYPES AVAILABLE ON REQUEST

## ACCESSORIES

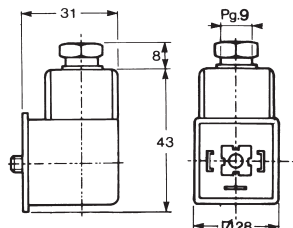


### CONNECTORS FOR COILS

(Protection class IP65)  
by DIN 43650



**MP1**



**MP2**

### ADJUSTABLE TIMER to preset DUTY CYCLE



A "TEST" button is provided  
and 2 leds are used to show  
the state of the timer.

The load is supplied as soon as the power is switched on. The trimmer "ON" controls the ON-time for valve energizing, while the trimmer "OFF" sets the interval between 2 sequential times. The sequence is repeated as long as the power supply remains connected.

**TIME: OFF** 0.5-45 min. adjustable

**ON** 0.5-10 sec. adjustable

**VOLTAGES:** 24-240 V AC/DC

**MAX. CURRENT:** 1A

**CURRENT CONSUMPTION:** 4mA max.

**TEMPERATURE:** -40° +60° C

**PROTECTION CLASS:** IP65 when installed  
with 3 pole plug connector MP2 (DIN 43650)

**WEIGHT:** 55 gr.

**ORDER CODIFICATION**  
**TEC22**

### Connector for coil (DIN 43650)

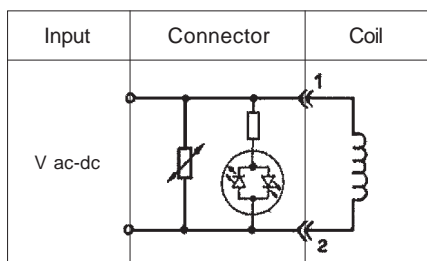


Ordering code	Supply voltage until	Coil type	Protection class	Remarks
<b>MP1</b>	0-250V~/300V=	U1	IP 65	CONNECTOR
<b>MP1-LED-24V</b>	24V	U1	IP 65	+LED
<b>MP1-LED-24V-5M</b>	24V	U1	IP 65	+LED+CABLE
<b>MP1-LED-230V</b>	230V	U1	IP 65	+LED



Ordering code	Supply voltage until	Coil type	Protection class	Remarks
<b>MP2</b>	0-250V~/300V=	U2/U3	IP 65	CONNECTOR
<b>MP2-LED-24V</b>	24V	U2/U3	IP 65	+LED
<b>MP2-LED-230V</b>	230V	U2/U3	IP 65	+LED

### Electronic circuit for MP-LED



Bipolar LED and VDR to protect supply and switch.  
(The energy in the coil is limited by the VDR).  
Voltage: 24 or 230V.