SOLENOID VALVES

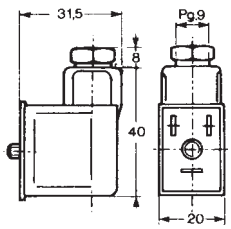
1. GENERAL PURPOSE VALVES

DIRECT ACTING

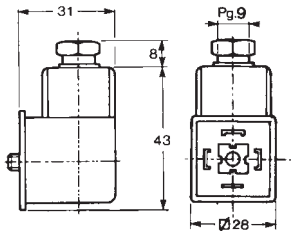
INDIRECT ACTING

ACCESSORIES

CONNECTORS FOR COILS
(Protection class IP65)
by DIN 43650



MP1



MP2

Coils are always included in the valve, connectors are to be ordered seperately.

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

(2009/01)

► Direct acting or pilot operated hung diaphragm solenoid valves: versions not requiring a minimum operating Δp.

► Pilot operated solenoid valves: versions requiring the minimum Δp indicated in the table in order to function correctly (see paragraph "*Differential pressure*").

► Drawing: in addition to the dimensional and construction characteristics, the drawing also indicates the correct direction of fluid flow by means of the following letters: P: inlet - A: outlet - R: exhaust

► Maximum allowable pressure (PS): maximum static pressure that the valve can support without risk of leaks, breakages, deterioration or permanent deformation.

► Opening time: time lapse between the solenoid valve energising and the instant in which the flow at the outlet reaches 90% of its maximum value.

► Closing time: time lapse between the solenoid valve de-energising and the instant in which the flow at the outlet reaches 10% of its maximum value.

The opening/closing times stated are measured using air or water at 20°C. The times can be greatly influenced by the operating conditions (for example: fluid viscosity, type of electric signal, differential pressure).

► Fluid temperature: maximum and minimum temperatures of the controlled fluid according to the solenoid valve materials. Make sure that the controlled fluid does not solidify or exceed the maximum allowed viscosity at very low temperatures. Also make sure that the fluid temperature does not affect its compatibility with the valve materials.

► Ambient temperature: the stated values are a function of to the coil encapsulation material and its insulation class. The above mentioned considerations about the *minimum fluid temperature* are also valid for the minimum ambient temperature. The maximum admissible ambient temperature is a function of both coil and controlled fluid temperature. The combined effect of all three temperatures must not allow the coil to exceed the temperature of insulation class (indicated in paragraph *Coil* in data sheet). The maximum ambient temperature stated on the data sheet is that which allows the solenoid valve to function with the coil and fluid at their respective maximum allowed temperatures.

► Continuous duty: ED 100% indicates suitability of the coil to operate in "continuous service", in other words constantly energised. In case of a lower ED, refer to the "energising time/de-energised" time diagrams or to the cycle time reported on the data sheet itself. If these values are not stated, a cycle time of 5 minutes must be considered for DC coils and 30 seconds for AC coils (Standard VDE580).

► Protection degree: in order to guarantee the stated protection degree, coils with spade terminals (DIN 46340) must be equipped with connectors having the same protection degree. Also make sure that the connector gasket is suitable for the maximum temperature reached by the coil. When assessing the protection degree required for a particular application, careful consideration must also be given to possible phenomena such as condensation or defrosting, as well as to the ambient relative humidity.

► Kv: indicates the quantity of water, expressed in m^3/h, that passes through the solenoid valve with a pressure drop of 1 bar and a temperature between 5°C and 30°C (Standard EN60730-2-8).

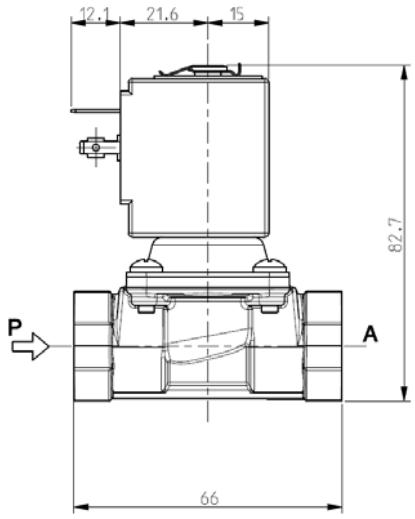
► Differential pressure:
Δ*p min*: indicates the minimum pressure difference between the inlet and outlet required for the correct operation of pilot operated solenoid valves. This value is zero for direct acting or pilot operated hung diaphragm solenoid valves.

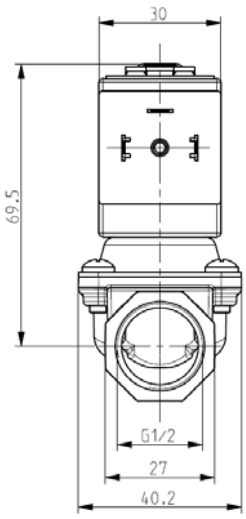
Δ*p max*: indicates the maximum pressure difference between the inlet and outlet at which the solenoid valve can function correctly.

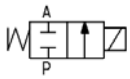
► Power absorption: indicates the apparent power during inrush and holding for AC (VA) and the 'cold' absorbed power for DC (W). The power absorptions are measured by energising the coil at nominal voltage at an ambient temperature of 20°C.

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 mm²/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 (Polyphenilsulfure) 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					Valve	Coil	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).

(2016/01)

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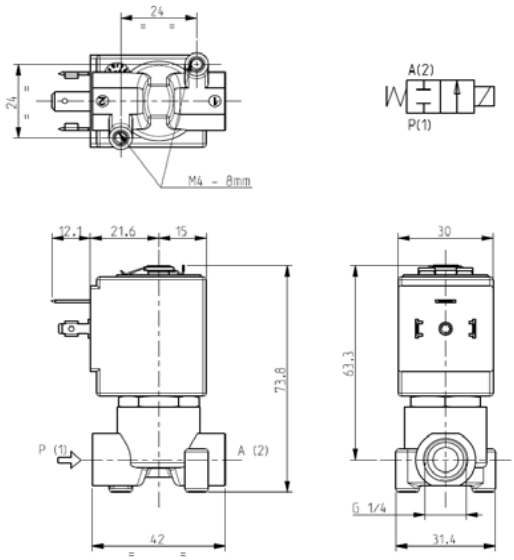
SOLENOID VALVE
2/2 - NC (Normally closed)
Direct acting
G 1/4

L121



► GENERAL FEATURES

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

► TECHNICAL FEATURES

Maximum allowable pressure (PS)	40 bar
Opening time	~20ms
Closing time	~20ms
Fluid temperature	-10°C +90°C (NBR) 0°C +130°C (FPM) -10°C +140°C (EPDM)
Max viscosity	5°E (~37 cStokes or mm^2/s)

► MATERIALS IN CONTACT WITH FLUID

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

► COIL

Continuous duty		ED 100%
Encapsulation material		PPS (Polyphenilsulfure) fiberglass reinforced
Insulation class		F (155°C) on request class H (180°C) – UL (see ZA34)
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	**ZA10A**: 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 (m^3/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)
		Δp min	Δp max												
			Gases		Liquids			Valve	Coil	AC (VA)		DC (W)			
			AC	DC	AC	DC				Inrush	Holding				
G 1/4	1,6	0	30	30	30	30	0,09	**L121V02**	**ZA10A**	23	14	9	FPM	1	0,290
	2,3		20	16	20	16	0,15	**L121B02**					NBR	1 - 2	
								L121V02					FPM	1	
								L121D02					EPDM		
	3,2		12	4	12	4	0,30	**L121B02**					NBR		
								L121V02					FPM		
			-	7	-	7		**L121B02**	**ZA10G**	-	-	12	NBR	-	
								L121V02					FPM		
	4,5		6	2	6	2	0,40	**L121B02**	**ZA10A**	23	14	9	NBR		
								L121V02					FPM		
								L121D02					EPDM	2	
			-	3	-	3		**L121B02**	**ZA10G**	-	-	12	NBR		
								L121V02					FPM		
								L121D02					EPDM	2	

► NOTES

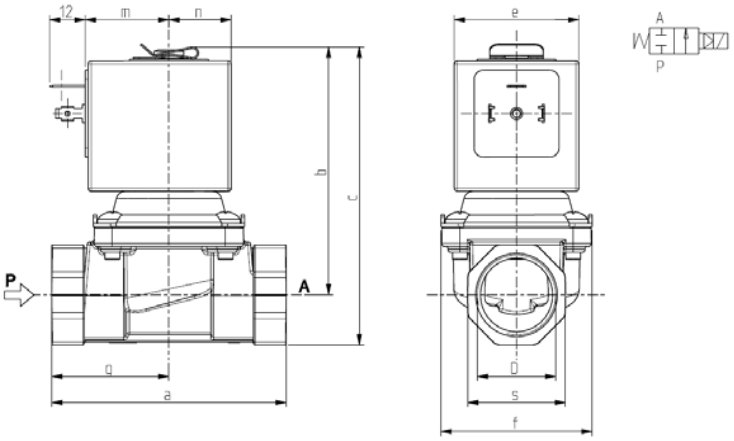
- Sealings : NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer EPDM = Ethylene-propylene elastomer
- IMQ CSV approval, see ZA10 datasheet for further details

1 - On request special coil ZA32A, class "F", with UL approved windings - see overleaf.
2 - Model available on request only: ask for minimum quantity.

(2015/07)

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 ZA32K 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

		ZA10A	ZA32K	Z130A	Z923A/E
Continuous duty		ED 100%			
Encapsulation material		PPS (Polyphenilsulfure) fiberglass reinforced	PET (polyethylene terephtalate) fiberglass reinforced		PPS (Polyphenilsulfure) fiberglass reinforced
Insulation class		F (155°C) on request class H (180°C) – UL (see ZA34)		F (140°C) on request class H (165°C) - UL	H (165°C)
Ambient temperature		-10°C +50°C		-10°C +60°C	-10°C +80°C
Electric connections		DIN 46340 - 3 poles connectors (EN175301-803)			
Protection degree		IP 67 (EN 60529) with plug connector	IP 65 (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) Δp min	Δp max Gas AC	Δp max Gas DC	Δp max Liquids AC	Δp max Liquids DC	Kv (m³/h)	Series and type Valve	Series and type Coil	Power absorption AC (VA) Inrush	Power absorption AC (VA) Holding	Power absorption DC W	Sealings	Notes	Weight (kg)
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**	**ZA32K**	-	-	10	(*) = V (FPM)	-	0.350
G1/2			10	3	10	3	2.2	**L133(*)16**	**ZA10A**	23	14	9		1	0.410
			-	8	-	8		**L133(*)17**	**ZA32K**	-	-	10	(*) = D (EPDM)	-	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	-			1,810
			-	3	-	3			**Z923A**	-	-	17	(●) = V (FPM)		

► NOTES

- Sealings : NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer EPDM = Ethylene-propylene elastomer (WRAS/KTW homologated compound)
- The nominal flow is guaranteed with Δp min ≥ 0,3 bar. Contact us in case of lower Δp min values.

1 - IMQ CSV approval, see ZA10 datasheet for further details

Technical modifications keep in reserve !

(2015/07)

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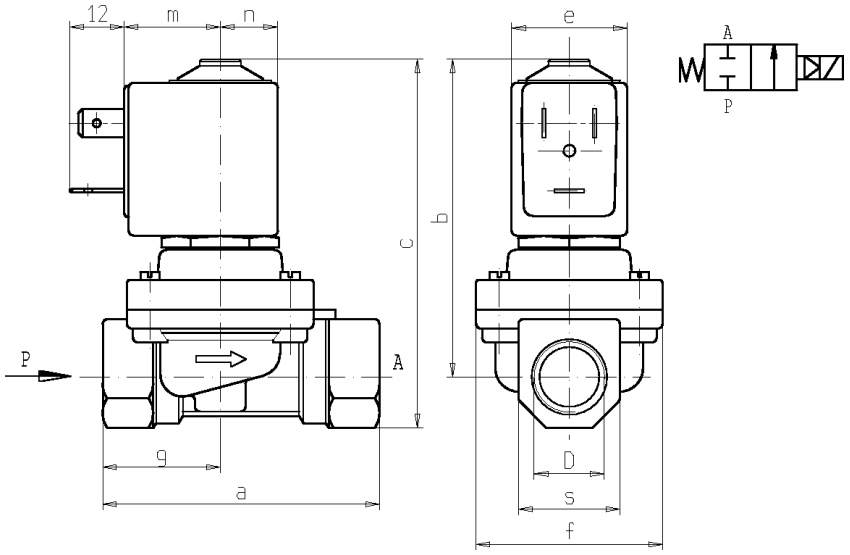
SOLENOID VALVE
2/2 - NC (Normally closed)
Pilot operated
G3/8 ÷ 1

L145



D	a	b	c	e	f	m	n	s	g
G 3/8	60	69	80	25	40	21	12,5	22	25,5
G 1/2	66	72	85	25	40	21	12,5	27	33
G 3/4	79	78	94,5	32	50	27	16	33	39,5
G 1	105	102	123	32	71	27	16	42	46

► GENERAL FEATURES

Diaphragm valve, pilot operated, having full orifice.
Suitable to shut off liquid and gaseous fluids; particularly suitable to shut off overheated water and steam (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)	G3/8 and G1/2: 16 bar G3/4 and G1: 9 bar
Opening time	~100ms
Closing time	from ~500ms to ~1500ms
Fluid temperature	+60°C +170°C
Max viscosity	5°E (~37 cStokes or mm^2/s)

► MATERIALS IN CONTACT WITH FLUID

Body	Brass
Sealing	Reinforced PTFE (Polytetrafluorethylene)
Internal components	Brass and stainless steel
Seat	Stainless steel
Guide assembly	Stainless steel
Shading ring	Copper

► COIL

Continuous duty	ED 100%
Coil impregnation	Polyester resin
Encapsulation material	PPS (polyphenilsulfure) glass fibre reinforced
Insulation class	H (180°C) - UL
Ambient temperature	-10 C° +80 °C
Electric connenctions	Z5: DIN 46340 – 3 poles connector (DIN 43650) Z6: DIN 46340 – 3 poles connector
Protection degree	IP 65 (EN 60529) with plug connector
Voltages AC	24V/50Hz - 110V/50Hz (120V/60Hz) 230V/50Hz (+10% -15%) (Other voltages and frequencies on request).

Port size ISO 228	Ø Int. (mm)	Differential pressure (bar)					Kv (m^3/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)
		Δp min	Δp max					Valve	Coil	AC (VA)		c.c. (W)			
			Gas		Liquids					Inrush	Holding				
			c.a.	c.c.	c.a.	c.c.									
G 3/8	10	0,4	8	-	8	-	2	L145R2	Z614A	16	10	-	reinforced PTFE	1	0,360
G 1/2							2,5								0,415
G 3/4	16		6		6		4,5	L145R4	Z534A	23	14				0,760
G1	18,5						8,5	L145R2							1,365

► NOTES

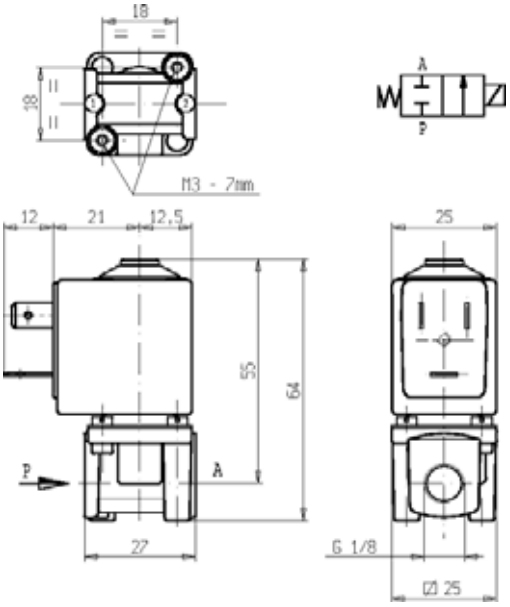
- Sealings : PTFE = Polytetrafluorethylene (reinforced)

1 - On request Z610A or Z530A coil, encapsulated in PBT (Polybutylene-terephtalate) class "F" (+155°C): maximum fluid temperature +100°C, maximum ambient temperature +60°C.

(2003/06)

SOLENOID VALVE
2/2- NC (Normally closed)
Direct acting
G 1/8

L177



► GENERAL FEATURES
Direct acting solenoid valve.
Suitable to shut off liquid and gaseous fluids (verify the compatibility of fluid with material in contact)

► TECHNICAL FEATURES

Maximum allowable pressure (PS)	30bar
Opening time	from ~10ms to ~20ms.
Closing time	from ~10ms to ~20ms.
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
Seat	Brass
Core tube	Stainless steel
Shading coil	Copper

► COIL

Continuous duty		ED 100%
Encapsulation material		PET (polyethylene terephtalate) fiberglass reinforced
Insulation class		F (155°C) – on request class H (180 °C) - UL
Ambient temperature		-10 C° +60 °C
Electric connection		DIN 46340- 3 poles plug connectors
Protection degree		IP 65 (EN 60529) with plug connectors
Voltages	*DC*	12-24V (+10% -5%)
	AC	24V/50-60Hz - 110V/50-60Hz (120V/60Hz)
		230V/50-60Hz (+10% -15%)
		(Other voltages and frequencies on request).

Port size ISO-228	Orifice size (mm)	Differential pressure (bar)					Kv (m^3/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)
		Δp min	Δp max					Valve	Coil	AC (VA)		DC (W)			
			Gases		Liquids					Inrush	Holding				
			AC	DC	AC	DC									
G 1/8	1,6	0	30	20	30	20	0,09	L177B04	Z610A	16	10	6	NBR	-	0,170
								L177V04					FPM	-	
	2,3		13	6	12	5	0,14	L177B04					NBR	-	
								L177D04					EPDM	1	
								L177V04					FPM	-	
	3,2		7	1,4	6	1,2	0,25	L177B04					NBR	-	
								L177V04					FPM	1	

► NOTES
- Sealings: NBR = Nitrile-butylene elastomer FPM = Fluoro-carbon elastomer EPDM = Ethylene-propylene elastomer
1 - Model available on request only: ask for minimum quantity.

Technical modifications keep in reserve !

(2008/01)

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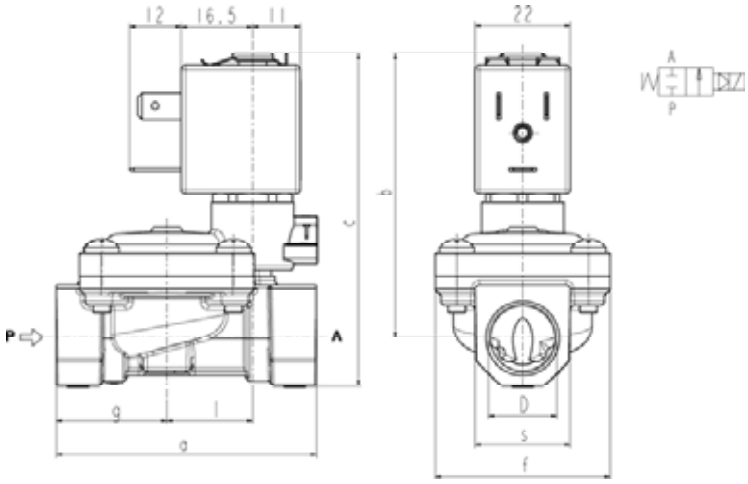
SOLENOID VALVE
2/2- NC (Normally closed)
Pilot operated
G 3/8 ÷ G 1

L182



D	a	b	c	f	g	l	s
G 3/8	60	66	77	40	25,5	20	22
G 1/2	66	68	82	40	29	20	27
G 3/4	79	72,5	89	50	35,5	24,5	33
G 1	105	85	106	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) -10°C +140°C (EPDM)
Max viscosity	5°E (~37 cStokes o mm²/s)

► MATERIALS IN CONTACT WITH FLUID

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

► COIL

		ZB10A	ZB12A	ZB14A
According to standards		/	UL and CSA	UL and CSA
Encapsulation material		PA fiberglass reinforced	PET fiberglass reinforced	PET fiberglass reinforced
Insulation class		F (155°C)	F (155°C)	H (180°C)
Ambient temperature		-10°C +60°C	-10°C +60°C	-10°C +75°C
Continuous duty		ED 100%		
Electric connection		DIN 46340- 3 poles plug connector		
Protection degree		IP 65 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector
Voltages	*DC*	12-24V (+10% -5%)		
	AC	24V/50-60Hz - 115V/50Hz - 230V/50-60Hz (+10% -15%)		

(Other voltages and frequencies on request).

Port size ISO 228	Orifice size (mm)	Differential pressure (bar) Δp min	Δp max Gases AC	Δp max Gases DC	Δp max Liquids AC	Δp max Liquids DC	Kv (m³/h)	Series and type: Valve	Series and type: Valve with manual override	Series and type: Coil	Power absorption AC (VA) Inrush VA	Power absorption AC (VA) Holding VA	Power absorption AC (VA) Holding W	Power absorption DC W	Sealings	Notes	Weight (kg)
3/8	13,5	0,35	16 (12)	16 (12)	16 (12)	16 (12)	2,5	L182(*)01	L182(*)02	ZB10A ZB12A	12	6	4	5,5	(*) = B (NBR) (*) = V (FPM) (*) = D (EPDM)	1	0,32
1/2							3,8										0,38
3/4	18		12 (10)	12 (10)	12 (10)	12 (10)	5									2	0,52
1	24						12										1,08

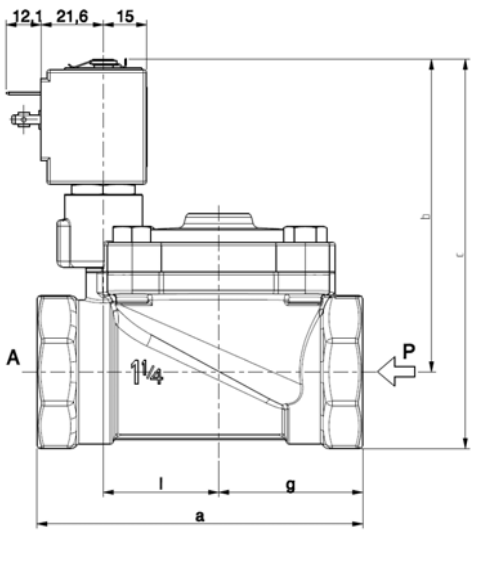
► NOTES

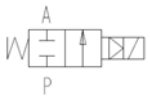
- Sealings: B(NBR)=Nitrile-butylene elastomer V(FPM)=Fluoro-carbon elastomer D(EPDM)=Ethylene-propylene elastomer (WRAS/KTW homologated compound)
- Operation with gazeous media , at high pressure without any outlet restriction, can reduce the diaphragm life.
- On request coil in class H (ZB14A – see § "COIL")
- The bracketed values of Δp max are related to valves with V(FPM) seals.

1 - Low power consumption coil on request (3,5 VA in AC – 3W in DC): Δp max = 12 bar
2 - Low power consumption coil on request (3,5 VA in AC – 3W in DC): Δp max = 8 bar

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).

► 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

► 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)

► COIL

Continuous duty		ED 100%
Encapsulation material		PPS (Polyphenilsulfure) fiberglass reinforced
Coil insulation class		F (155°C) on request class H (180°C) – UL (see ZA34)
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					Valve	Valve with manual override	Coil	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					FPM		1,590
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

Technical modifications keep in reserve !

(2015/07)

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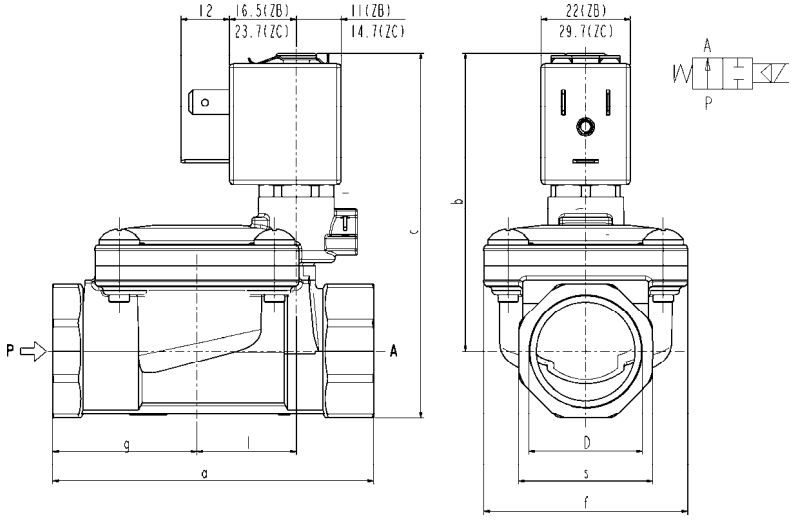
SOLENOID VALVE
2/2- NO (Normally open)
Pilot operated
G 3/8 ÷ G 1

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

		ZB10K ZC10A	ZB12K ZC12A	ZB14K ZC14A
Approval		/	▲ UL and CSA	▲ UL and CSA
Encapsulation material		PA fiberglass reinforced	PET fiberglass reinforced	PET fiberglass reinforced
Insulation class		F (155°C)	F (155°C)	H (180°C)
Ambient temperature		-10°C +60°C	-10°C +60°C	-10°C +75°C
Continuous duty		ED 100%		
Electric connection		DIN 46340- 3 poles plug connector (EN 175301-803 for ZC)		
Protection degree		IP 65 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector
Voltages	*DC*	**ZC:** 12-24V (+10% -5%)		
	AC	**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) Δp min	Δp max Gas AC	Δp max Gas DC	Δp max Liquids AC	Δp max Liquids DC	Kv (m³/h)	Series and type Valve	Series and type Coil	Power absorption AC (VA) Inrush VA	Power absorption AC (VA) Holding VA	Power absorption AC (VA) Holding W	Power absorption DC W	Sealings	Notes	Weight (kg)
3/8	13,5	0,35	12	-	12	-	2,5	L282B01	ZB10K ZB12K	11,7	10	7,6	-	NBR	-	0,32
								L282V01						FPM		
1/2							3,8	L282B01						NBR		0,38
								L282V01						FPM		
3/4	18		10		10		5	L282B01						NBR		0,52
								L282V01						FPM		
1	24		12		12		12	L282B01						NBR		1,08
			10		10			L282V01						FPM		
3/8	13,5		-	12	-	12	2,5	L282B01	ZC10A ZC12A	-	-	-	5,5	NBR		0,32
								L282V01						FPM		
1/2							3,8	L282B01						NBR		0,38
								L282V01						FPM		
3/4	18			10		10	5	L282B01						NBR		0,52
								L282V01						FPM		
1	24			12		12	12	L282B01						NBR		1,08
				10		10		L282V01						FPM		

► NOTES

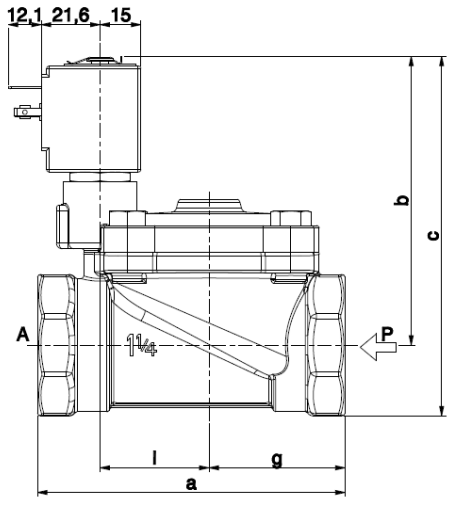
- Sealings: NBR=Nitrile-butylene elastomer FPM=Fluoro-carbon elastomer
- Operation with gaseous media, at high pressure without any outlet restriction, can reduce the diaphragm life.
- On request coil in class H (ZB14K – ZC14A - see § "COIL")

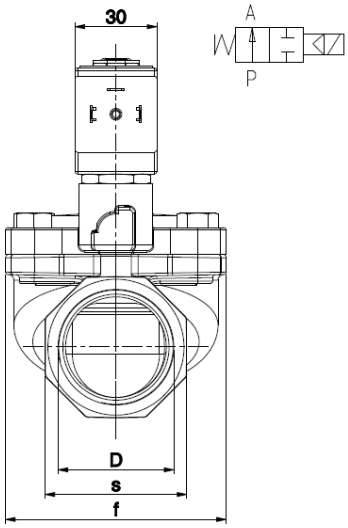
Technical modifications keep in reserve !

(2014/01)

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).

► 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

► 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)

► COIL

Continuous duty		ED 100%
Encapsulation material		PPS (Polyphenilsulfure) fiberglass reinforced
Coil insulation class		F (155°C) on request class H (180°C) – UL (see ZA34)
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*	**ZA10A:** 12-24V (+10% -5%)
	AC	**ZA10YE:** 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) Δp min	Δp max Gases AC	Δp max Gases DC	Δp max Liquids AC	Δp max Liquids DC	Kv (m³/h)	Series and type Valve	Series and type Coil	Power absorption AC (VA) Inrush	Power absorption AC (VA) Holding	Power absorption DC (W)	Sealings	Notes	Weight (kg)
G 1 ¼	30	0,50	10	-	10	-	15	L282B48	ZA10YE	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					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					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

(2015/07)

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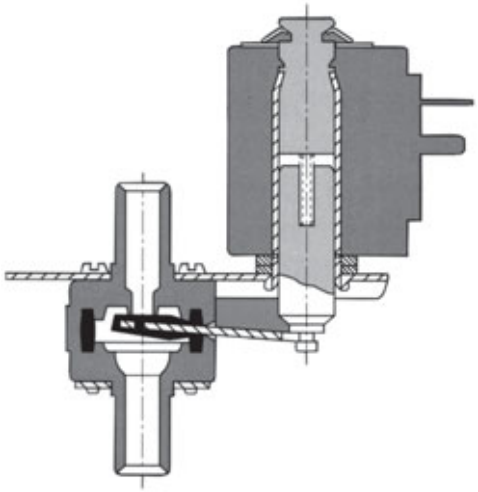
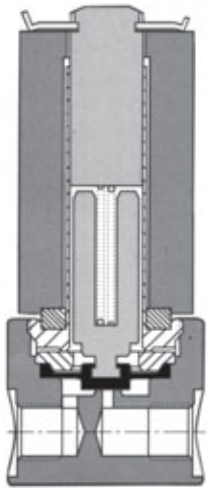
2. DRY VALVES (total separation)

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

(2007/01)

3. PINCH VALVES

Description:
This pinch valves controls the distribution of a fluid by pinching or loosing 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 Ø 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

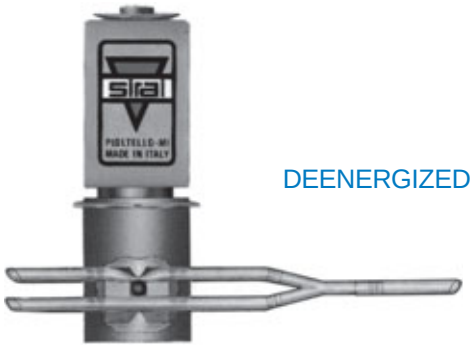
ENERGIZED COIL

2-way NO

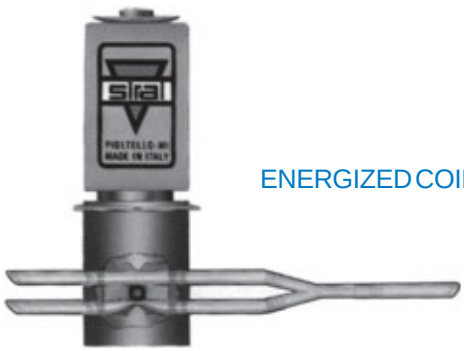
DEENERGIZED COIL

ENERGIZED COIL

3-way



DEENERGIZED COIL



ENERGIZED COIL

MORE DETAILS & OTHER TYPES AVAILABLE ON REQUEST

(2007/01)

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