

# SOLENOID VALVES

## 1. GENERAL PURPOSE VALVES

DIRECT  
ACTING

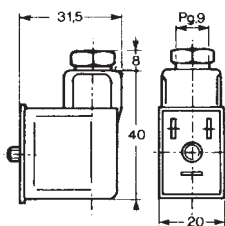


INDIRECT  
ACTING

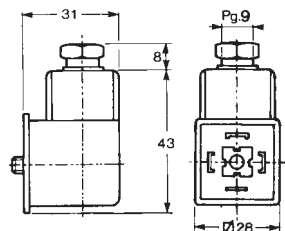
## ACCESSORIES



**CONNECTORS FOR COILS**  
(Protection class IP65)  
by DIN 43650



**MP1**



**MP2**

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

### 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**



## DATASHEETS

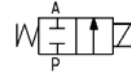
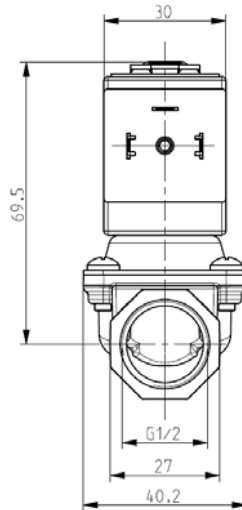
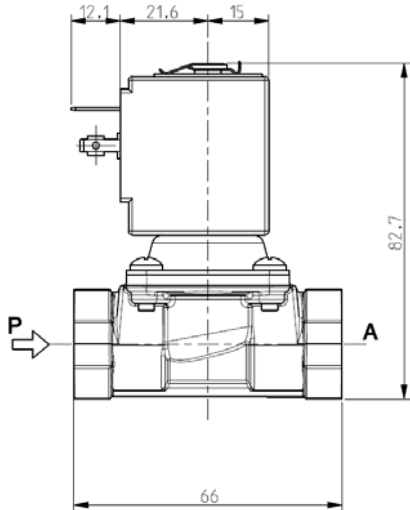
### CONSULTATION GUIDE

- ▶ **Direct acting or pilot operated hung diaphragm solenoid valves:** versions not requiring a minimum operating  $\Delta p$ .
  - ▶ **Pilot operated solenoid valves:** versions requiring the minimum  $\Delta p$  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<sup>3</sup>/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:**
    - $\Delta p_{min}$ : 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.
    - $\Delta p_{max}$ : 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 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 (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 (m <sup>3</sup> /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	-	L113V22	ZA10A	23	14	-	FPM	1	0,390	
			-	0,20	-	0,20			-	-	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).

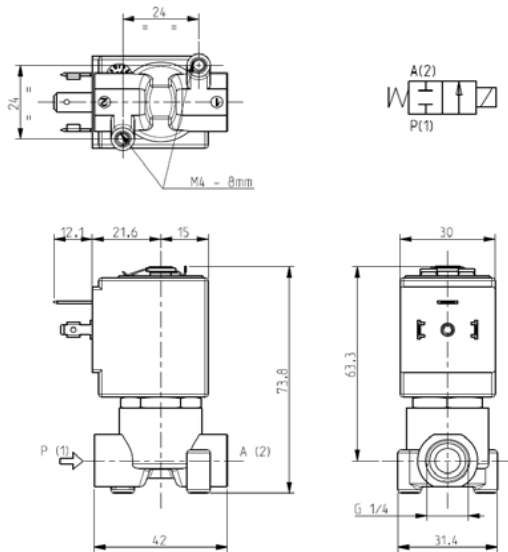
Technical modifications keep in reserve !

(2016/01)



**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<sup>2</sup>/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 <sup>3</sup> /h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)	
		Δp min	Δp max				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 L121B02	ZA10A	23	14	9	FPM	1	0,290
													NBR	1 - 2	
	2,3		20	16	20	16	0,15	L121V02 L121D02	ZA10A	23	14	9	FPM	1	
													EPDM		
	3,2		12	4	12	4	0,30	L121B02 L121V02	ZA10G	-	-	12	NBR	-	
													FPM		
	4,5		6	2	6	2	0,40	L121B02 L121V02	ZA10A	23	14	9	NBR	-	
													FPM		
	4,5		-	3	-	3	0,40	L121B02 L121D02	ZA10G	-	-	12	NBR	2	
													FPM		
	4,5		-	-	-	-	0,40	L121V02 L121D02	ZA10G	-	-	12	FPM	2	
													EPDM		

**► 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.

Technical modifications keep in reserve !

(2015/07)

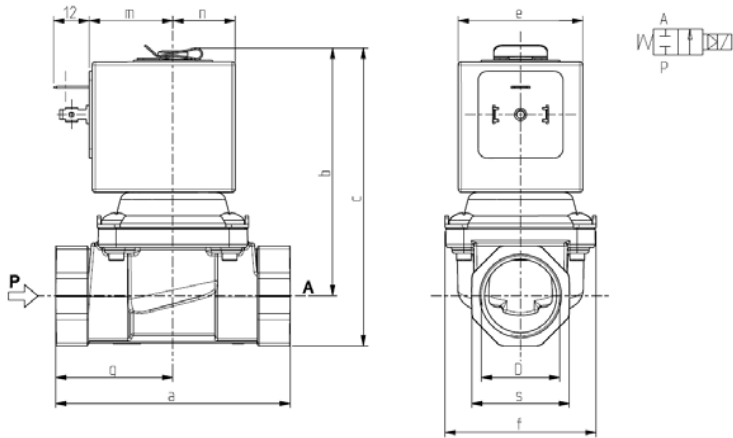


# SOLENOID VALVE

## 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

Continuous duty

Encapsulation material

Insulation class

Ambient temperature

Electric connections

Protection degree

Voltages DC  
AC

ZA10A	ZA32K	Z130A	Z923A/E
ED 100%			
PPS (Polyphenilsulfure) fiberglass reinforced	PET (polyethylene terephthalate) fiberglass reinforced	PPS (Polyphenilsulfure) fiberglass reinforced	
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)
-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)			

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



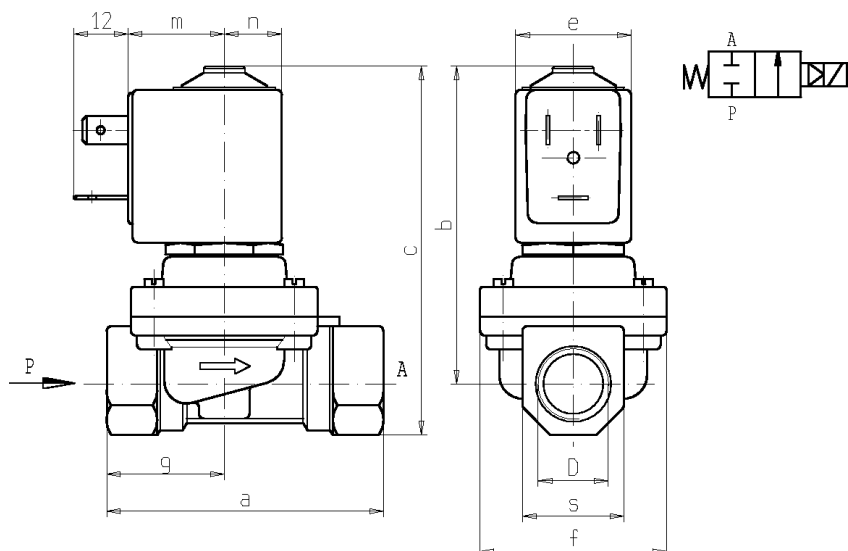
## SOLENOID VALVE

### 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<sup>2</sup>/s)

#### ► MATERIALS IN CONTACT WITH FLUID

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

#### ► COIL

<i>Continuous duty</i>	ED 100%
<i>Coil impregnation</i>	Polyester resin
<i>Encapsulation material</i>	PPS (polyphenilsulfure) glass fibre reinforced
<i>Insulation class</i>	H (180°C) - UL
<i>Ambient temperature</i>	-10 C° +80 °C
<i>Electric connenctions</i>	Z5: DIN 46340 – 3 poles connector (DIN 43650) Z6: DIN 46340 – 3 poles connector
<i>Protection degree</i>	IP 65 (EN 60529) with plug connector
<i>Voltages AC</i>	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 <sup>3</sup> /h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)	
		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
2,5							0,415								
4,5							L145R4	Z534A	23	14	0,760				
8,5							L145R2				1,365				

#### ► NOTES

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

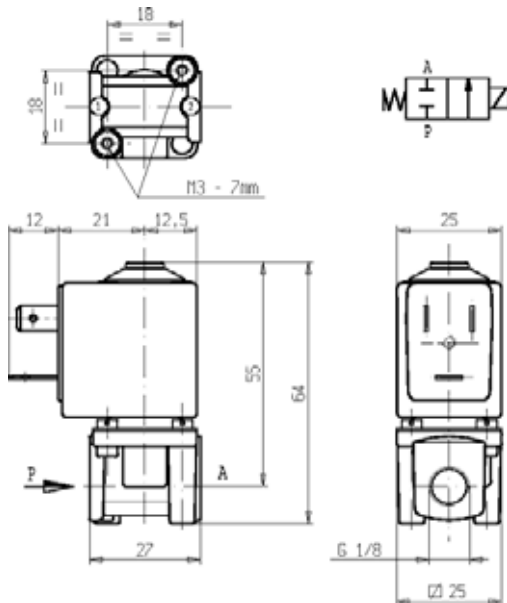
Technical modifications keep in reserve !

(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 mm<sup>2</sup>/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 terephthalate) 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 <sup>3</sup> /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																
	2,3		13	6	12	5										0,14	L177D04	Z610A	16	10	6	EPDM	1									
																								L177V04								
			3,2	7	1,4	6																		1,2	0,25	L177B04	Z610A	16	10	6	NBR	-

**► NOTES**

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

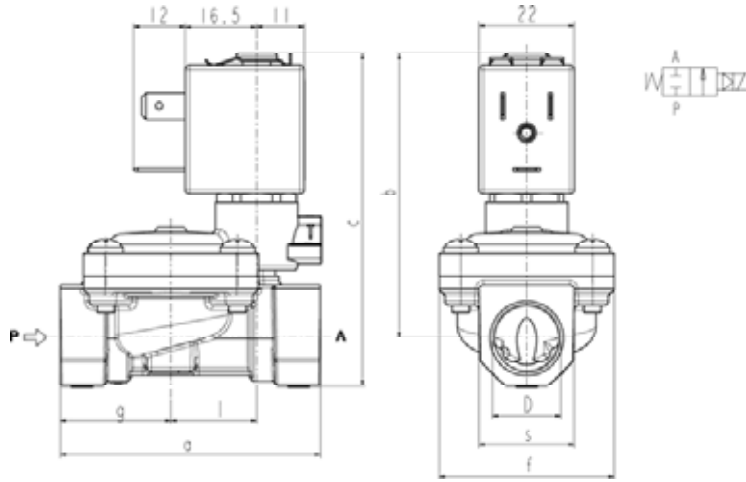
Technical modifications keep in reserve !

(2008/01)



**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 mm<sup>2</sup>/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**

According to standards  
 Encapsulation material

**Insulation class**  
**Ambient temperature**  
**Continuous duty**  
**Electric connection**

**Protection degree**

**Voltages** DC  
 AC

ZB10A	ZB12A	ZB14A
/	UL and CSA	UL and CSA
PA fiberglass reinforced	PET fiberglass reinforced	PET fiberglass reinforced
F (155°C) -10°C +60°C	F (155°C) -10°C +60°C	H (180°C) -10°C +75°C
ED 100%		
DIN 46340- 3 poles plug connector		
IP 65 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector	IP 67 (EN 60529) with plug connector
12-24V (+10% -5%)		
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)				Kv (m <sup>3</sup> /h)	Series and type			Power absorption				Sealings	Notes	Weight (kg)		
		Δp min	Δp max				Valve	Valve with manual override	Coil	AC (VA)			DC					
			Gases		Liquids					Inrush VA	Holding VA	W					W	
			AC	DC	AC													DC
3/8	13,5	0,35	16	16	16	16	L182(*)01	L182(*)02	ZB10A ZB12A	12	6	4	5,5	(*) = B (NBR)	1	0,32		
1/2			(12)	(12)	(12)	(12)										0,38		
3/4	18		12	12	12	12									(*) = V (FPM)	2	0,52	
1	24		(10)	(10)	(10)	(10)											(*) = D (EPDM)	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 gaseous 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

Technical modifications keep in reserve !

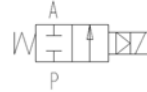
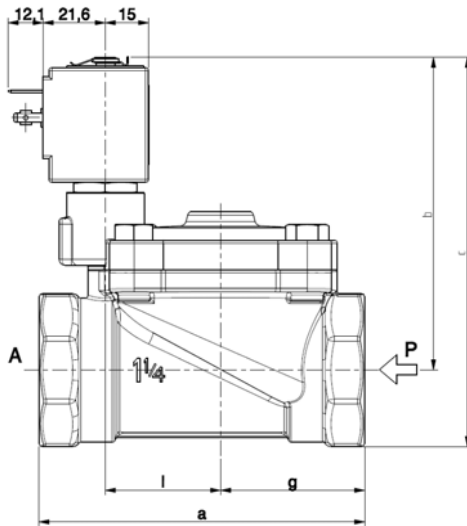
(2008/01)





**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  
 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 mm<sup>2</sup>/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**

Continuous duty ED 100%  
 Encapsulation material PPS (Polyphenylsulfure) 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 (m <sup>3</sup> /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											
G 1 ¼	30	0,50	10	10	10	15	L182B48	L182B49	ZA10A	23	14	9	NBR (diaphragm) FPM (actuator)	-	1,590						
G 1 ½	45														2,510						
G 2	45														2,990						
G 1 ¼	30														15	27	34	L182V48	L182V49	FPM	1,590
G 1 ½	45																				2,510
G 2	45																				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)



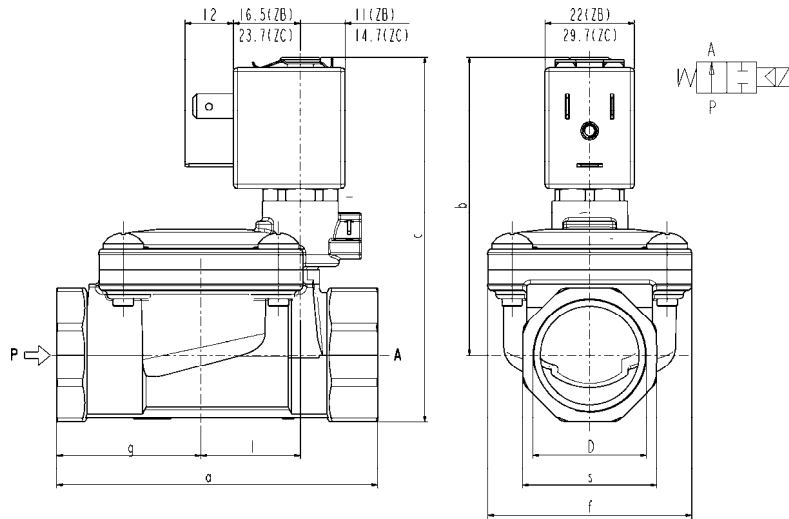
# SOLENOID VALVE

## 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 mm <sup>2</sup> /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	▲ UL and CSA
Encapsulation material	PET fiberglass reinforced
Insulation class	F (155°C)
Ambient temperature	-10°C +60°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
Voltages	DC
	AC

ZB10K ZC10A	ZB12K ZC12A	ZB14K ZC14A
/	▲ UL and CSA	▲ UL and CSA
PA fiberglass reinforced F (155°C)	PET fiberglass reinforced F (155°C)	PET fiberglass reinforced H (180°C)
-10°C +60°C	-10°C +60°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 (m <sup>3</sup> /h)	Series and type		Power absorption				Sealings	Notes	Weight (kg)
		Δp max					Valve	Coil	AC (VA)			DC			
		Gas		Liquids					Inrush	Holding	DC				
AC	DC	AC	DC	VA	VA	W	W								
3/8	13,5	0,35	12	12	2,5	L282B01 L282V01	ZB10K ZB12K	11,7	10	7,6	-	NBR FPM NBR FPM NBR FPM	-	0,32	
1/2															10
3/4	12		12	5	L282B01 L282V01										
1															10
3/8	13,5	0,35	12	12	2,5	L282B01 L282V01	ZC10A ZC12A	-	-	-	5,5	NBR FPM NBR FPM NBR FPM	-	0,32	
1/2															10
3/4	12		12	5	L282B01 L282V01										
1															10

#### ► 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")

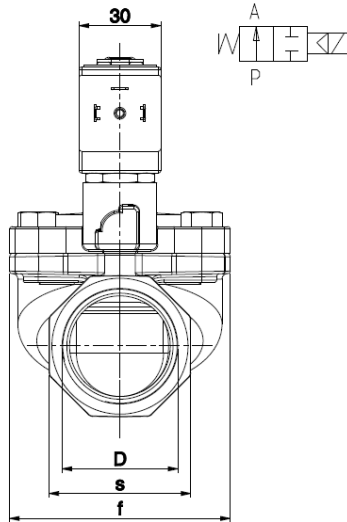
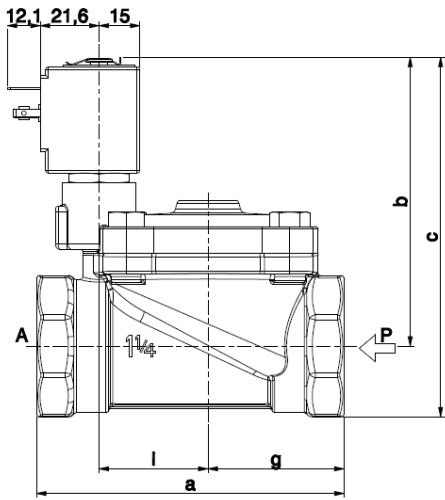
Technical modifications keep in reserve !

(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).

► **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**

Continuous duty ED 100%  
 Encapsulation material PPS (Polyphenylsulfure) 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  
 AC  
**ZA10A:** 12-24V (+10% -5%)  
**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)				Kv (m³/h)	Series and type		Power absorption			Sealings	Notes	Weight (kg)
		Δp max					Valve	Coil	AC (VA)		DC (W)			
		Gases		Liquids					Inrush	Holding				
G 1 ¼	30	10	-	10	-	L282B48	ZA10YE	28			20	-	NBR (diaphragm) FPM (actuator)	-
G 1 ½	45	9	-	9	-				2,510					
G 2	45								2,990					
G 1 ¼	30	10	-	10	-	L282V48	ZA10A	-	-	9	NBR (diaphragm) FPM (actuator)	-	1,590	
G 1 ½	45	9	-	9	-								2,510	
G 2	45												2,990	
G 1 ¼	30	-	10	-	10	L282B48	ZA10A	-	-	9	NBR (diaphragm) FPM (actuator)	-	1,590	
G 1 ½	45	-	9	-	9								2,510	
G 2	45												2,990	
G 1 ¼	30	-	10	-	10	L282V48	ZA10A	-	-	9	FPM	-	1,590	
G 1 ½	45	-	9	-	9								2,510	
G 2	45												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

Technical modifications keep in reserve !

(2015/07)