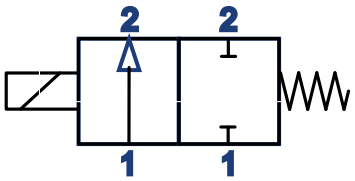
Technical information

2/2-way solenoid valve indirect operated normally closed.

The ST-IA is an indirect operated 2/2-way solenoid valve. The valve is normally closed. The solenoid valves have an orifice of 13 to 50 mm and can be used with a minimum differential pressure of 0.5 bars. The body material can be brass or stainless steel with a NBR, EPDM or FKM seal. The ST-IA solenoid valves are compatible with all coils from the CS1-series.

Series	Standard (ST)	
Function	2/2 way	
Operation	Indirect operated (I)	
Position	Normally closed (A)	
Body	Brass (B) / SS 316 (S)	
Seal & Media Temperature	NBR (N)	-10..80°C
	EPDM (E)	-30..130°C
	FKM (F)	-10..120°C
Thread	BSPP / NPT (N)	
Ambient Temperature	Max 50°C	
Min. Press. Difference	0.5 bar	
Max. Pressure	16 bar	
Coil series	CS1	
Voltage	380V AC 50Hz (380AC)	
	230V AC 50/60Hz (230AC)	
	120V AC 50Hz (120AC)	
	24V AC 50/60Hz (024AC)	
	24V DC (024DC)	
	12V DC (012DC)	
Insulation Class	Class F	
Power	13 W / 17 VA	
Duty Cycle	100% ED	
Connector	EN 175301-803 (formerly DIN 43650A)	
Protection Class	IP 65 (with cable plug)	
Circuit Diagram		

Principle of operation

A solenoid valve is a valve for neutral, clean liquids and gases, which is electrically controlled with the aid of a solenoid. 2/2 way means that the valve has two ports (input/ output) and two positions (closed/open). The valve is normally closed, this means that the valve is closed when de-energized.

Indirect operated solenoid valves using the differential pressure of the medium on the ports to open and close the orifice. A minimum differential pressure of 0.5 bar required for proper operation. Furthermore, they can control a high flow rate with a relatively small solenoid coil. They can be used in only one flow direction. This type of solenoid valves is for example used in irrigation systems where the pressure is far above 1 bar and a large orifice is desired. Indirect operated valves open slower than direct operated valves and require a minimum differential pressure but are well suited for high flow rates.

www.pneuparts.com
Florijn 10 b/c, Deurne, The Netherlands
sales@pneuparts.com

Dimensions

Pipe (P)	Orifice (D)	Kv (m3/h)	AxBxH (mm)	Response Time Open/Close
3/8" (038)	13 mm (130)	3.84	66x48x112	50/180 ms
1/2" (012)	13 mm (130)	3.84	66x48x112	50/180 ms
3/4" (034)	20 mm (200)	6.4	75x58x118	70/220 ms
1" (100)	25 mm (250)	10.24	96x70x131	80/250 ms
1-1/4" (114)	40 mm (400)	18.77	131x96x146	160/360 ms
1-1/2" (112)	40 mm (400)	25.59	131x96x146	160/360 ms
2" (200)	50 mm (500)	40.94	165x120x167	190/540 ms

Area of application

Body material	Allowed media
Brass (ASTM #37800)	Neutral and non-corrosive media.
Stainless Steel (SS 316)	Suitable for aggressive media and corrosive media like seawater.

Body material

The ST-IA series is available with a brass or stainless steel body material.

Diaphragm

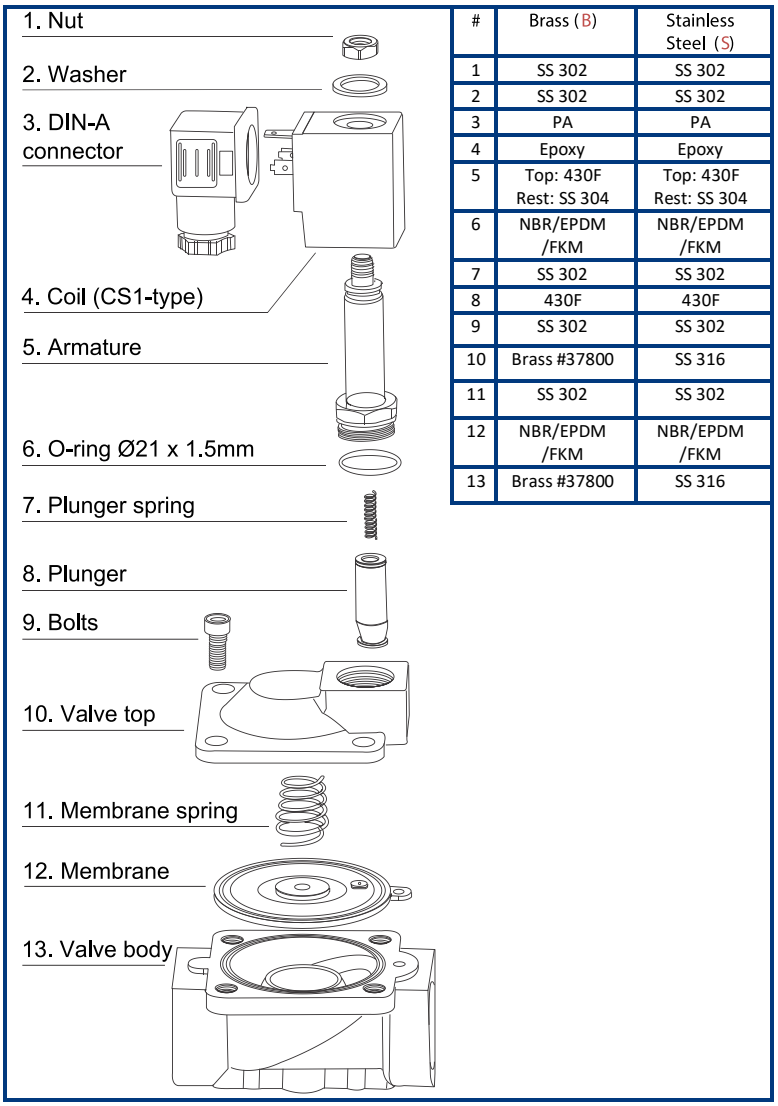
Diaphragm	Temperature	Allowed media	Not allowed
FKM	-10°C.120°C	Most fuels and oils, cold water, detergents, compressed air.	Glycol-based brake fluids, ammonia gas, hot water and steam, low molecular weight organic acids (such as acetic acid).
EPDM	-30°C.130°C	Water and steam, alcohol.	Oils, fats, fuels, solvents.
NBR	-10°C.80°C	Neutral media, like air, cold water, hydraulic oil.	Fuels, strong acids, brake fluid.

Diaphragm

The ST-IA series are available with several materials. Depending on the application the correct diaphragm should be selected. In the following table a concise overview is presented of compatible media.

Flow chart

In the flow chart, the flow of water from 20°C is shown as a function of the positive pressure difference across the valve. The flow rate is expressed in liters per minute and the pressure in bar.



#	Brass (B)	Stainless Steel (S)
1	SS 302	SS 302
2	SS 302	SS 302
3	PA	PA
4	Epoxy	Epoxy
5	Top: 430F Rest: SS 304	Top: 430F Rest: SS 304
6	NBR/EPDM /FKM	NBR/EPDM /FKM
7	SS 302	SS 302
8	430F	430F
9	SS 302	SS 302
10	Brass #37800	SS 316
11	SS 302	SS 302
12	NBR/EPDM /FKM	NBR/EPDM /FKM
13	Brass #37800	SS 316

General safety instructions

- This product is not a safety device and may not be used as such.
- Damage caused by improper use, falling, improper operating conditions or other reasons, may cause improper functioning of the solenoid. Correct transport, proper storage and installation, and proper use and maintenance, are essential for reliable and error-free operation.
- It is the responsibility of the user to select the right product for the application.
- The product may not function properly as a result of dirt, wear, damage (for example, by dropping) or improper use. Therefore, the product should not be used in applications where a malfunction can cause danger or damage.
- This product is not intended or approved for medical applications, food and/or application in gas appliances.
- Solenoid valves can only be used with clean liquids or gases. It is recommended to install a filter before the solenoid valve.
- Check the compatibility of the medium used, temperature and other operating conditions with the materials and specifications of the product.
- Never exceed the limits for pressure, temperature or voltage as indicated on the product and/or in the technical documentation.
- The temperature of a solenoid valve coil can rise during operation; this is normal. Overheating will cause smoke and a burning smell. In this case, the power supply must immediately be disconnected.
- Warning: a valve opens and closes quickly. Improper use can cause pressure transients (fluid hammer) in the pipes with possible damage as a consequence.
- It is not allowed to change the construction of the valve.