

We're more than valves... We're solutions.

## SubMiniature Solenoid Valves



### We're more than valves... we're solutions

We specialize in custom engineering solutions and manufacturing support. If you have a difficult application problem, call on the technical engineering staff at Solenoid Solutions with their expertise in solving critical application problems.

We can design a solenoid valve or manifold to fit your exact needs. We provide prototypes, delivery quality valves as you need them and offer technical assistance to help you select the right valve for your application. More than just providing you with the best valve, we will also work to fit your business model; we offer options like safety stock, consignment options and blanket ordering with shipments scheduled to meet your forecasted delivery.

### Premium quality Solenoid valves reasonably priced... designed to fit your application

Located in Erie, Pennsylvania, Solenoid Solutions, Inc. has been setting the standard for solenoid valves for more than 50 years. Annually, Solenoid Solutions produces millions of valves and components to exacting ISO 9001:2008 Quality System Standards.

From the high performance subminiature and miniature Wattmizer series to our larger, high capacity valves, we offer a wide selection of high quality valves designed to fulfill the requirements of any solenoid valve application. New, state-of-the-art machining facilities, along with lean manufacturing and assembly processes, allow us to provide higher quality solenoid valves at a competitive price and deliver them on time, every time.



## 10mm and 15mm Solenoid Pilot Valves

The 10mm and 15mm direct acting and pilot valves are a further evolution of Solenoid Solution's solenoid valve offering manufactured for the pneumatic automation and instrumentation market

The 10mm and 15mm solenoid valves are designed for those air and inert gas applications where high performance in the areas of pressure and flow are required together with small size, very low power consumption and high reliability even at high cycling rates. And all Solenoid Solutions 10mm and 15mm solenoid valves are suitable for oxygen service.

The 10mm and 15mm solenoid valves are made with an encapsulated coil joined to a valve body. The assembly is non-detachable. All solenoid valves feature...

- Heat-resistant bobbin molded with 30% glass filled Polyethylene
- Class H copper wire
- Encapsulation with high quality, specially designed glass filled polypropylene
- Stainless steel plunger guide, plunger and valve core

The valve assembly is designed for more than 50 million cycles and is normally provided with Buna seals and a monostable manual override. Other seal materials are available as required. The valve is delivered with a specially designed seal and screws for assembly to a valve base or manifold.

The coil is designed and manufactured in accordance with EN60204.1 and is suitable for industrial ambient conditions. For use in different ambient conditions with high humidity, contact Solenoid Solutions. The coil is in conformity with 94/9 EC ATEX for electrical apparatus of group II, Category 3. All valve components are made from UL recognized materials.

Different electrical connections are available. All of the pneumatic connections are located on the valve body and all Solenoid Solutions 10mm and 15mm pilot valves are suitable for installation on sub-bases or in multi-valve manifolds with common inlet pressure and exhaust ports.

# Standard Technical Data Solenoid

### SubMiniature Valve

technical data	10 mm	15 mm		
Valve Function	3/2 NC	3/2 NC-3/2 NO - 2/2 NC - 2/2 NO - 3/2 UNI		
Media	air	air, dried or lubricated		
Orifice Size	0.8 mm	0.8/11.1/1.5 mm		
Pressure	0 115 PSIG	0 to 145 PSIG		
Cv Flow Factor	0.23	0./0.32 to 0.64		
Response Time	10 ms	5÷15 ms		
Cycling Time	2400 cpm	2000 cpm		
Lifetime Expectancy	50 million cycles	50 million cycles		
Manual Override	monostable	monostable		
Mounting	in any position	in any position		
Fixing	N°2 screws M 1.6 x 14	N°2 screws M3 X 18		

## 10 mm Perpendicular Connection



10 mm Axial Connection



15 mm Amp 2.8 x 0.5

## Coil technical data

Duty Cycle	ED 100%	ED 100%		
Temperature	ambient -5°C to +50°C	ambient -10°C to +50°C		
Power	1W	1 to 2.5W (DC) 3VA (AC)		
Voltage	12-24V DC (other voltages on request)	12-24 VDC 24-115-230 VAC (other voltages on request)		
Voltage Variation	±10%	±10%		
Insulation Class	F	F		
Degrees of Protection	IP 40 (according to EN 60529) equivalent to NEMA 3	IP 65 (according to EN 60529) equivalent to NEMA 4		
Electrical Connection	connector	Amp 2.8 X 0.5 - DIN C - Flying leads - M12		
Coil Construction	according to EN 60204.1 and VDE 0580	according to EN 60204.1 and VDE 0580		

### **Materials**

Valve Body	PBT (Polybutylene terephthalate)	PPS (Polyethaline sulfide)			
Seals	HNBR (other materials on request)	NBR - FKM - FKM Low temp. (-40°)			
Cores	stainless steel	stainless steel			
Springs	stainless steel	stainless steel			
Coil	PET (polyethylene terephthalatel)	Glass reinforced Polyamide 6.6			
Copper Wire	Class H 180°C IEC 60317-51	Class H 200°C IEC 60317-13			

15 mm DIN C



15 mm M12 10 mm and 15 mm SubMiniature Pilot Valves

## **Selection Chart**

## 15-1 00-A 1 B

part number – see example below

## SUB MINIATURE

			0		
15	1	00	Α	1	В
Product Family	Seal Material	Function & Specification	Electrical Connection	Electrical Voltage	Options
10 mm 15 mm	1 - Buna 2 - Viton 3 - LT Viton	00 01 02	10 mm A = Axial with Connector B = Axial without Connector	1 = 12VDC (Turn & Lock) 2 = 24VDC 3 = 24VAC 50/60 Hz	Manual Override B = Bistable N = No Override
		03 04 05	C = Perpendicular with Connector D = Perpendicular without Connector	4 = 110VAC 50/60 Hz 5 = 220VAC 50/60 Hz 6 = 230VAC 50/60 Hz	Coil Orientation S = Same as Ports
		06 07 08 09	15 mm A = Industrial 9.4 mm 3 pins B = Din C 8.0 mm 3 pins		Other Options
		10 11 12	C = Std. Flying Leads (105C) $D = HT Flying Leads (140C)$ $E = M12$		Contact Factory

Base Models				Function and Specifications								
Nominal Size	Buna Product Family	Viton Product Family	LT Viton Product Family	Function	Orifice Port 1 in./mm	Orifice Port 3 in./mm	CV Factor	Flow in CFM Port 1 to Port 2 at 87 PSIG	Min. Pressure PSIG	Max. Pressure PSIG	Power Wattage	Power VA
10	10-1 00	NA	NA	2/2 NC	0.03/0.8	_	0.013	4.6	0	116	1	NA
	15-1 00	15-2 00	15-3 00	2/2 NC	0.03/0.8	_	0.019	6.4	0	116	1	3
	15-1 01	15-2 01	15-3 01	2/2 NC	0.04/1.1	_	0.028	9.9	0	145	2.5	3
	15-1 02	15-2 02	15-3 02	2/2 NC	0.06/1.5	_	0.037	12.7	0	87	2.5	3
	15-1 03	15-2 03	15-3 03	2/2 NO	.04/1.0	_	0.027	9.2	0	145	1	3
	15-1 04	15-2 04	15-3 04	2/2 NO	0.06/1.5	_	0.037	12.7	0	145	2.5	3
15 mm	15-1 05	15-2 05	15-3 05	3/2 NC	0.03/0.8	.04/1.0	0.019	6.4	0	116	1	3
	15-1 06	15-2 06	15-3 06	3/2 NC	0.04/1.1	0.06/1.5	0.028	9.9	0	145	2.5	3
	15-1 07	15-2 07	15-3 07	3/2 NC	0.06/1.5	0.06/1.5	0.037	12.7	0	87	2.5	3
	15-1 08	15-2 08	15-3 08	3/2 NC	0.03/0.8	.04/1.0	0.019	6.4	0	232	2.5	3
	15-1 09	15-2 09	15-3 09	3/2 NC	0.04/1.1	0.06/1.5	0.028	9.9	29	109	1	3
	15-1 10	15-2 10	15-3 10	3/2 NO	.04/1.0	0.04/1.1	0.027	8.1	0	102	2.5	3
	15-1 11	15-2 11	15-3 11	3/2 NO	0.06/1.5	0.06/1.5	0.025	12.7	0	51	2.5	3
	15-1 12	15-2 12	15-3 12	3/2 UNI	0.03/0.8	.04/1.0	0.067	6.4/8.1	29	145	2.5	3

## SM

#### 10 mm SubMiniature Pilot Valves

## **Dimensions**





## **Flow Diagrams**



## Flow Diagrams 2-Way





### 15 mm SubMiniature Pilot Valves





### 15 mm SubMiniature Pilot Valves



### **Dimensions**

## **Total Cost Solutions**

As an experienced manufacturer and supplier of solenoid valves and solenoid valve manifolds, it is incumbent upon us to provide valuable products that meet or exceed customer needs while reducing their overall costs. Solenoid Solutions implements this strategic stance by investing in engineering and product design programs, world-class machining

#### Product Design Prototyping Engineering Services



Advanced Assembly Quality Assurance ISO Certification systems, advanced assembly concepts, and by providing value-added services for its customers. The result adds up to quality products designed and produced that create Total Cost Solutions, an analysis of which often shows there can be a large difference between the price of something and its long-term cost.

#### Lean Manufacturing Automation SPC Statistical Process Control



Value Added Services Stocking Inventory JIT Delivery-Consignment







2251 Manchester Road Erie, Pennsylvania 16506-1001 USA FAX: 814-833-5439 www.solenoidsolutionsinc.com