

DM Type Solenoid Valves for use with Piston Actuated Valves Installation and Maintenance Instructions

1. Safety information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 1.7) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

1.1 Intended use

Referring to these Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use/application. The products comply with the requirements of the European Pressure Equipment Directive 97/23/EC and fall within category 'SEP'. It should be noted that products within this Category are not required by the Directive to carry the **CE** mark.

- i) The products have been specifically designed for use on air or water, which are in Group 2 of the above mentioned Pressure Equipment Directive. The products' use on other fluids may be possible but, if this is contemplated, Spirax Sarco should be contacted to confirm the suitability of the product for the application being considered.
- ii) Check material suitability, pressure and temperature and their maximum and minimum values. If the maximum operating limits of the product are lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or overtemperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations.
- iii) Determine the correct installation situation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.
- v) Remove protection covers from all connections before installation.

1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

1.3 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

1.4 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.5 Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns.

1.6 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.



1.7 Permits to work

All work must be carried out or be supervised by a suitably competent person. Personnel should be trained in the correct use of the product according to these Instructions. Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety. Post 'warning notices' if necessary.

1.8 Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures of 60°C (140°F).

1.9 Freezing

Provision must be made to protect products which are not self-draining against frost damage in environments where they may be exposed to temperatures below -10°C (14°F).

1.10 Disposal

Unless otherwise stated in these Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

1.11 Returning products

Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk.

This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.



2. Description

A 3-port two way electropneumatic pilot solenoid valve that can be directly mounted (banjo connection) to the PF51G- and PF61G-NC, NO and BD series piston actuated valves. The valve is supplied with a DIN connector and fitted with manual override as standard. Suitable for air pilot media. Water can also be used as a pilot media providing a suitable drain line is attached to the exhaust outlet.

Available types

Model	Actuator	Voltage/Frequency	Connection
DM11	45 mm	230/50 or 240/60 Vac	1/8" BSP
DM12	45 mm	110/50 or 120/60 Vac	1/8" BSP
DM13	45 mm	24/50 or 24/60 Vac	1/8" BSP
DM14	45 mm	24 Vdc	1/8" BSP
DM21	63 mm	230/50 or 240/60 Vac	1/4" BSP
DM22	63 mm	110/50 or 120/60 Vac	1/4" BSP
DM23	63 mm	24/50 or 24/60 Vac	1/4" BSP
DM24	63 mm	24 Vdc	1/4" BSP
DM31	90 mm	230/50 or 240/60 Vac	1/4" BSP
DM32	90 mm	110/50 or 120/60 Vac	1/4" BSP
DM33	90 mm	24/50 or 24/60 Vac	1/4" BSP
DM34	90 mm	24 Vdc	1/4" BSP

3. Technical details

Mounting	Banjo connection	
Manual override	Fitted as standard	
DIN connector	Type B	DM11, DM12, DM13 and DM14
	Type B	DM21, DM22, DM23 and DM24
	Type A	DM31, DM32, DM33 and DM34
Pilot media connection	DM11 to DM14	Push in type to suit 6 mm dia. nylon or copper tube
	DM21 to DM24 DM31 to DM34	
Coil consumption	DM11, DM12, DM13 and DM14	ac 10 VA (holding)
		sc 16 VA (maximum)
		dc 7 Watts
	DM21, DM22, DM23, and DM24	ac 10 VA (holding)
		ac 16 VA (maximum)
		dc 7 Watts
DM31, DM32, DM33 and DM34	ac 18 VA (holding)	
	ac 36 VA (maximum)	
	dc 14 Watts	

4. Limiting conditions

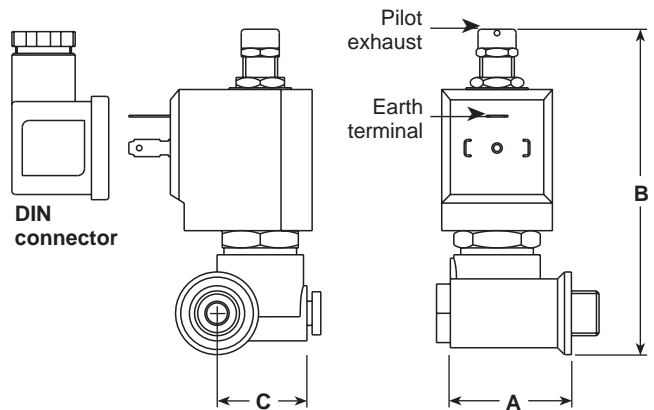
Maximum media temperature	60°C
Minimum media temperature	-10°C
Protection class	IP65 (with connector)
Operating pressure	0 bar g min. to 10 bar g max.

5. Materials

Part	Material
Body	ELNP Niploy coated brass
Seal	FKM

6. Dimensions / weights (approximate) in mm and kg

Type	A	B	C	Weight
DM11, DM12, DM13 and DM14	31	77	27	0.27
DM21, DM22, DM23 and DM24	35	78	27	0.27
DM31, DM32, DM33 and DM34	35	95	27	0.38



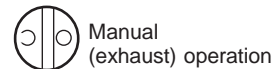
7. Installation

DM type solenoid valves should be mounted onto the piston actuator as shown below. To fit a solenoid valve onto a normally closed valve use the pilot connection marked 'NC', for normally open valves use the connection marked 'NO'. When using water as a pilot media, remove the cap from the exhaust connection and connect a drain line.

Auto/manual operation selection

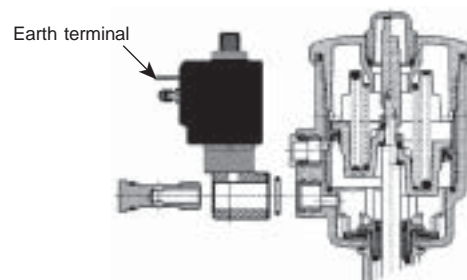


Normal (automatic) operation



Manual (exhaust) operation

DM solenoid valve mounting (normally closed valves)



8. Spares parts

No spares are available for this product.