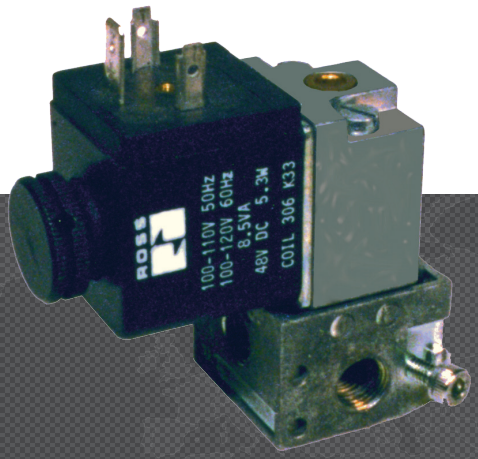
Directional Control Miniature Valves
W14 Series

Product Catalog



ROSS™
a global family

Direct Solenoid Pilot Controlled Valves Miniature 14 Series
Product Overview

ROSS® solenoid pilot valves provide reliable pilot control for various pneumatically actuated devices

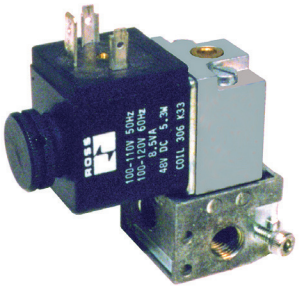
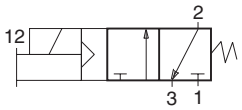


Illustration example.

Valve Schematic



VALVE FEATURES

Poppet Design	Positive sealing and self-compensating for wear; perpendicular poppet face seals
Mounting Options	Individual sub-base or manifold base mounting
Pilot Operation	Consistent actuation over the life of the valve; provides strong shifting forces with low power consumption

PRODUCT CREDENTIALS

CSA Certificate of Compliance	Declaration of Conformity	
	CE	EAC

Specifications

STANDARD SPECIFICATIONS				
GENERAL	Function	3/2 Valve	Normally Closed	
	Construction Design	Poppet		
	Actuation	Electrical	Direct Solenoid Pilot Controlled	
	Mounting	Base Mounted	Sub-Base	
			Manifold Base	
	Connection	Base - Threaded Port		NPT
	Manual Override	Flush - metal; locking, non-locking		
OPERATING CONDITIONS	Temperature	Ambient	5° to 120°F (-15° to 50°C)	
		Media	5° to 175°F (-15° to 80°C)	
		For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.		
	Flow Media	Filtered air		
	Operating Pressure	Vacuum to 150 psig (10 bar)		
ELECTRICAL DATA FOR SOLENOID PILOT	Solenoids	Current Flow	Power Consumption	Operating Voltage (each solenoid)
		DC	24 volts	0.8 watts
		AC	110 volts, 50 Hz 120 volts, 50/60 Hz	0.3 VA holding
			230-240 volts	
		Rated for continuous duty		
	Enclosure Rating	IP65, IEC 60529		
	Electrical Connection	DIN EN 175301-803	Form A	
CONSTRUCTION MATERIAL	Valve Body	Cast Aluminum		
	Seals	Buna-N		

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.

Ordering Information

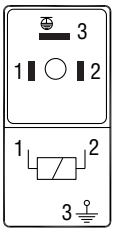
SINGLE DIRECT SOLENOID PILOT CONTROLLED VALVES				3-Way 2-Position Valves
Override Type	**Valve Model Number***			**Flow** C_V (Nl/min)
	Voltage			
	24 V DC	**110-120 V AC**	**230 V AC**	
Locking	W1413A1408W	W1413A1408Z	W1413A1408Y	0.1 (98)
Non-Locking	W1413A1409W	W1413A1409Z	W1413A1409Y	
For other voltages, consult ROSS.				
* **Sub-bases and manifold base ordered separately.**				

Sub-Base	**Port Thread**	**Model Number**	
		NPT Thread	**G Thread**
	1/8	516B91	D516B91

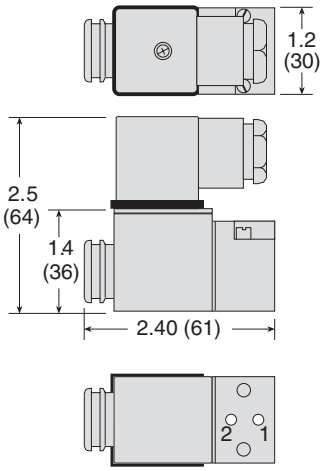
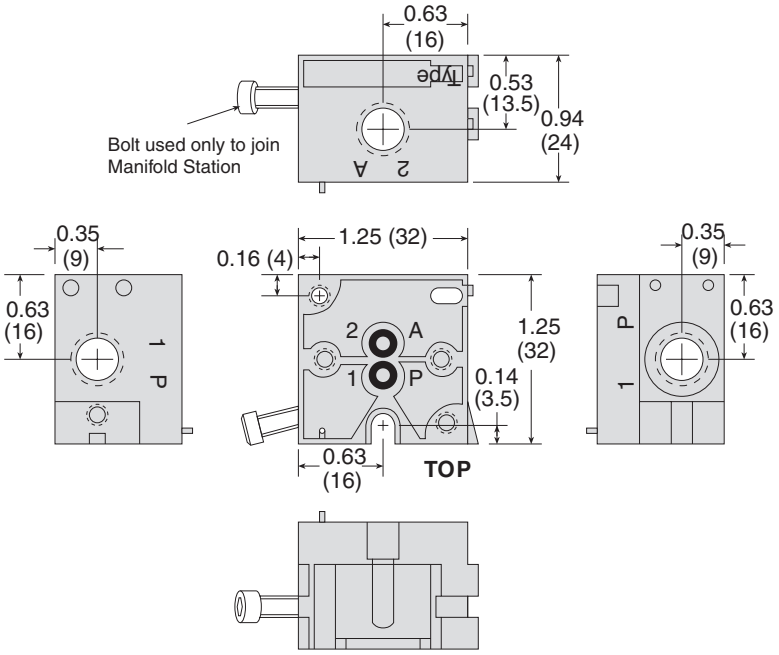
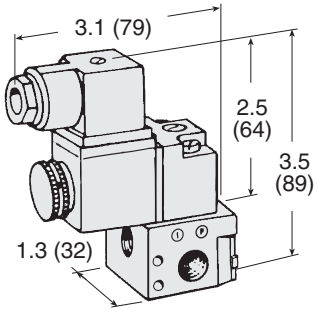
Manifold Base	**Port Thread**	**Model Number**
	1/8	535K91

Solenoid Pinout

DIN EN 175301-803 Form A



1 - Positive
2 - Negative
3 - Ground

DIMENSIONS	Inches (mm)
Valve	
Manifold	
Valve on the Base	 *Valve is shown with electrical connector. Electrical connector, optional.*
Downloadable CAD models available.	

PREWIRED ELECTRICAL CONNECTORS

Illustration example.

	Cable						Model Number			
	End 1	End 2	Connection	Quantity Included	Length meters (feet)	Cord Diameter mm	Without Light	Lighted Connector*		
	Connector	Cord						24 V DC	120 V AC	230 V AC
Prewired Connectors	DIN EN 175301-803 Form A	Flying leads	Solenoid	1	2 (6.5)	6	721K77	720K77-W	720K77-Z	720K77-Y
				1	2 (6.5)	10	371K77	383K77-W	383K77-Z	383K77-Y

ELECTRICAL CONNECTORS

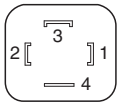
Cable Grip	
Without Light	With Light
	

Illustration examples.

	Connector					Model Number			
	Type	Connection	Fitting Connection	Quantity Included	Cord Diameter mm	Without Light	Lighted Connector*		
							24 V DC	120 V AC	230 V AC
Connectors	DIN EN 175301-803 Form A	Solenoid	Cable grip	1	8 to 10	937K87	936K87-W	936K87-Z	936K87-Y
			1/2" NPT conduit	1	–	723K77	724K77-W	724K77-Z	724K77-Y

Connector Pinout

DIN EN 175301-803



1 - Black
2 - Black
4 - Green/Yellow (Ground)

*Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.

CAUTIONS, WARNINGS And STANDARD WARRANTY

ROSS OPERATING VALVE, ROSS CONTROLS®, ROSS DECCO®, and AUTOMATIC VALVE INDUSTRIAL, collectively the "ROSS Group".

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure all sources of energy are turned off, the entire pneumatic system is shut down and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).

2. All ROSS Group Products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any product can be tampered with and/or need servicing after installation, persons responsible for the safety of others or the care of equipment must check ROSS Group Products on a regular basis and perform all necessary maintenance to ensure safe operating conditions.

3. All applicable instructions should be read and complied with before using any fluid power system to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS Group location.

4. Each ROSS Group Product should be used within its specification limits. In addition, use only ROSS Group components to repair ROSS Group Products.

WARNINGS:
Failure to follow these instructions can result in personal injury and/or property damage.

FILTRATION and LUBRICATION

1. Dirt, scale, moisture, etc., are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. The ROSS Group recommends a filter with a 5-micron rating for normal applications.

2. All standard ROSS Group filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition and hazardous leakage. Immediately replace crazed, cracked, or deteriorated bowls.

3. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum base oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks personal injury, and/or damage to property.

WARNINGS:
Failure to follow these instructions can result in personal injury and/or property damage.

AVOID INTAKE/EXHAUST RESTRICTION

1. Do not restrict air flow in the supply line. To do so could reduce the pressure of the supply air below minimum requirements for the valve and thereby causing erratic action.

2. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

WARNINGS: ***Failure to follow these instructions can result in personal injury and/or property damage.***

SAFETY APPLICATIONS

1. Mechanical Power Presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.

2. Safe Exhaust (dump) valves without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All Safe Exhaust valve installations should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.

3. Per specifications and regulations, the ROSS L-O-X® and L-O-X® with EEZ-ON®, N06 and N16 Series operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

WARNINGS:
Failure to follow these instructions can result in personal injury and/or property damage.

STANDARD WARRANTY

All products sold by the ROSS Group are warranted for a one-year period [with the exception of Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven (7) years] from the date of purchase. All products are, during their respective warranty periods, warranted to be free of defects in material and workmanship. The ROSS Group's obligation under this warranty is limited to repair, replacement or refund of the purchase price paid for products which the ROSS Group has determined, in its sole discretion, are defective. All warranties become void if a product has been subject to misuse, misapplication, improper maintenance, modification or tampering. Products for which warranty protection is sought must be returned to the ROSS Group freight prepaid.

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Other literature is available for engineering, maintenance, and service requirements.

If you need products or specifications not shown in this catalog, please visit ROSS' website, contact ROSS or your ROSS distributor. The ROSS Support Team will be happy to assist you in selecting the best product for your application.