



Installation and Maintenance Manual

Pneumatic/Electric Relay

VR32 Series



1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger", followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

Caution	Indicates a hazard with a low level of risk, which if not avoided, could result in minor or moderate injury.
Warning	Indicates a hazard with a medium level of risk, which if not avoided, could result in death or serious injury.
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Warning

- The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications. Since the products specified here can be used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet specific requirements.
- **Only trained personnel should operate pneumatically operated machinery and equipment.**
Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced personnel.
- **Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
 - 1) Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
 - 2) When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
 - 3) Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Supply air into the system gradually to create back pressure, i.e. incorporate a soft-start valve).
- **Do not use this product outside of the specifications. Contact SMC if it is to be used in any of the following conditions:**
 - 1) Conditions and environments beyond the given specifications, or if the product is to be used outdoors.
 - 2) Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
 - 3) An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Caution

- Ensure that the air supply system is filtered to 5 microns.

2 Specifications

Model/Specifications

Model	VR3200-01-Q	VR3201-01-Q
Construction	Open type	Splashproof (IP44 equivalent)
Weight	130 g	260 g
Operating pressure	0.1 to 1.0 MPa	
Ambient and fluid temperature	-5 to 60 °C (No freezing)	
Contacts	1 ab	
Port size	1/8	

Microswitch Rating

Voltage	Non-inductive load (A)				Inductive load (A)			
	Resistance load		Light load		Inductive load		Electric motor load	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
125 VAC	15	15	4	2	10	10	4	2
250 VAC	15	15	3	1.5	10	10	3	1.5
8 VDC	15	15	3	1.5	15	15	5	2.5
14 VDC	15	15	3	1.5	10	10	5	2.5
30 VDC	6	6	3	1.5	5	5	5	2.5

3 Installation

3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.
- If air leakage increases or the equipment does not operate properly, stop operation. Unexpected motion can cause injury and equipment damage.
- Confirm proper mounting. Check that the piping is not disconnected or crushed. Connect the compressed air supply to the product and perform appropriate functional and leakage inspections to check it is mounted properly.

- Information or specifications printed or marked on the product should not be erased, removed or covered up. Contact SMC if paint is to be applied to resin parts, as this may have an adverse effect due to the paint solvent.

Caution

- Before piping, perform air blow (flushing) or cleaning to remove any cutting chips, cutting oil, dust, etc. from the piping.
- When connecting piping to the product, refer to the symbol and name plate on the product to avoid mistakes in the position of the supply port, etc.
- Allow a sufficient margin of tube length when piping, in order to prevent twisting, tension or moment loads being applied to the tubes and fittings. This can cause damage to fittings and crushing, bursting or disconnection of tubing.
- Use the tube connected to the product at or above the minimum bending radius. If the tube is bent more than the minimum bending radius, it may be broken or crushed, which will prevent air from being supplied properly.

3.2 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact. Check the product specifications.
- Do not mount in a location exposed to radiant heat.
- Employ suitable protective measures in a location where there is contact with oil or welding spatter, etc.

Caution

Avoid using in a location where it could be splashed by liquids such as oils, coolant and water, and dust.

3 Installation (continued)

3.3 Piping

Warning

- Before piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1.5 to 2 threads exposed on the end of the pipe/fitting.
- When connecting a pipe fitting to the IN port, place the wrench over the hexagon portion of the lid. If the wrench is placed over the microswitch body, the neck of the microswitch could break.
- Tighten fittings to the specified tightening torque.

Thread	Tightening Torque (Nm)
Rc 1/8	7 to 9

Table 1

3.3 Lubrication

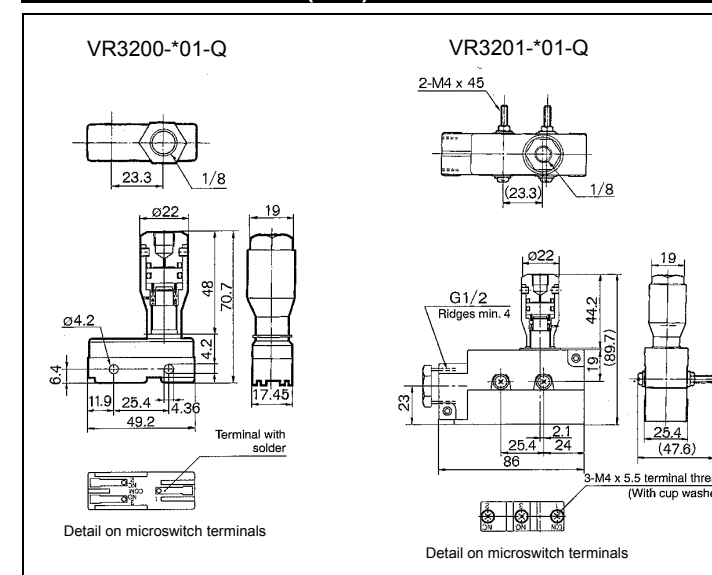
Caution

- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is used in the system, use turbine oil Class 1 (no additive), ISO VG32. Once lubricant is used in the system, lubrication must be continued because the original lubricant applied during manufacturing will be washed away.

4 How to Order

VR3200-01-Q			• CE-marked product
01			• Port size
N01		Rc 1/8	
F01		NPT 1/8	
		G 1/8	
• Construction			
0		Open type	
1		Splashproof (IP44 equivalent)	

5 Outline Dimensions (mm)



6 Maintenance

6.1 General Maintenance

Caution

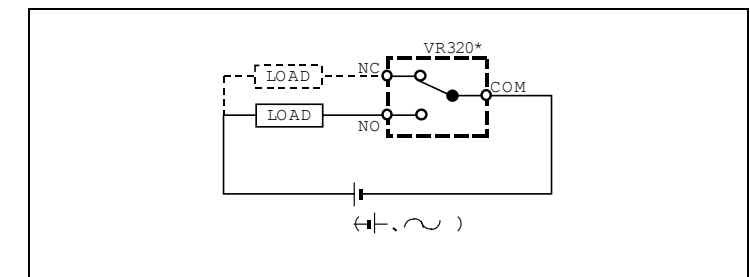
- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous. Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.
- Check regularly that there is no external damage.

Caution

- Remove condensate from air filters regularly.

7 Wiring Connection

- Wiring to be performed as indicated below



8 Construction

No.	Description	Material	Note
1	Body	Brass	
2	Cap	Brass	
3	Piston	POM	
4	Spring	Stainless Steel	
5	Microswitch		Contacts 1 ab

9 Contacts

AUSTRIA	(43) 2262 62280	NETHERLANDS	(31) 20 531 8888
BELGIUM	(32) 3 355 1464	NORWAY	(47) 67 12 90 20
CZECH REP.	(420) 541 424 611	POLAND	(48) 22 211 9600
DENMARK	(45) 7025 2900	PORTUGAL	(351) 21 471 1880
FINLAND	(358) 207 513513	SLOVAKIA	(421) 2 444 56725
FRANCE	(33) 1 6476 1000	SLOVENIA	(386) 73 885 412
GERMANY	(49) 6103 4020	SPAIN	(34) 945 184 100
GREECE	(30) 210 271 7265	SWEDEN	(46) 8 603 1200
HUNGARY	(36) 23 511 390	SWITZERLAND	(41) 52 396 3131
IRELAND	(353) 1 403 9000	UNITED KINGDOM	(44) 1908 563888
ITALY	(39) 02 92711		

SMC Corporation

URL : <http://www.smcworld.com> (Global) <http://www.smceu.com> (Europe)
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