

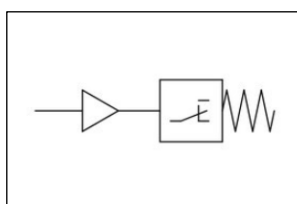


ORIGINAL INSTRUCTIONS

Instruction Manual

Pneumatic-electric Relay

Series VR3202



The intended use of this product is to convert pneumatic signal to electric relay.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC^{*)}, and other safety regulations.

^{*)} ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

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

Warning

- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.
- If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

2 Specifications

2.1 General specifications

Model	VR3202-#	
Construction	Splashproof	
Fluid	Air	
Operating pressure [MPa]	0.1 to 1	
Ambient and fluid temperature [°C]	-5 to 60 (no freezing)	
Port size	1/8"	
Minimum frequency	1 cycle / 30 days	
Maximum operating frequency [cycles/minute]	Mechanical	150
	Electrical	20
Impact/vibration resistance [m/s ²] ^{Note 1)}	1000 / 50	
Enclosure (based on IEC60529)	IP44 (Splashproof)	
Mounting orientation	Unrestricted	
Contacts [ab]	1ab (N.C. / N.O.)	
Limit switch standard	EN60947-5-1:2017	
Weight [g]	260	

Table 1.

2 Specifications - continued

Note 1) Impact resistance: Two axes (horizontal and vertical) and two directions were tested 3 times and no malfunction of the VR32 occurred (pulse shape: sine shape).

Vibration resistance: No malfunction occurred in a sweep cycle test between 10 to 150 Hz at vibration sweep 0.35mm. The test was performed in the two axes and two directions, 7 min per cycle (20 cycles).

2.2 Electrical specifications

Rated voltage	VAC	125, 250
	VDC	
Electrical entry	Conduit Pg13.5	
Terminal	Screwing terminal	
Insulation resistance [MΩ]	Min. 100 (at 500 V)	
Withstand voltage [VAC]	1500	

Table 2.

2.3 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	3	1.5	15		5	2.5
250			2.5	1.25			3	1.5
125	VDC	0.5			0.05			
250			0.25			0.03		

Table 3.

2.4 Special products

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3 Installation

3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.

Caution

- 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 in excess of the product's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

Caution

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

3.3 Piping

Caution

- Before connecting 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 thread 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.

Connection thread (Rc)	Tightening torque [N·m]
1/8	3 to 5

Table 4.

3 Installation - continued

3.4 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, refer to catalogue for details.

3.5 Air supply

Warning

- Use clean air. If the compressed air supply includes chemicals, synthetic materials (including organic solvents), salinity, corrosive gas etc., it can lead to damage or malfunction.

Caution

- Install an air filter upstream of the valve. Select an air filter with a filtration size of 5 μm or smaller.

3.6 Wiring

Wiring to be performed as indicated below.

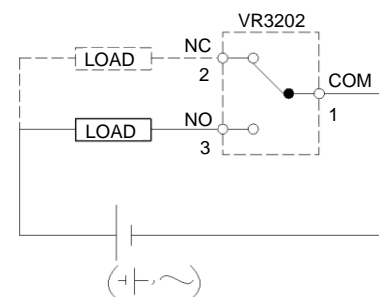


Figure 1.

3.6.1 Microswitch terminals

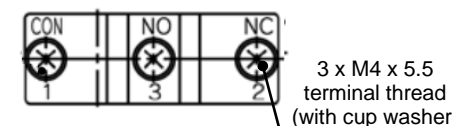


Figure 2.

4 How to Order

Refer to catalogue for 'How to Order'.

5 Outline Dimensions

Refer to catalogue for outline dimensions.

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.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- 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.

7 Limitations of Use

7.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

7.2 Low temperature operation

Caution

The valve can be used in an ambient temperature up to -5°C. However, take measures to prevent freezing or solidification of impurities, etc.

7.3 Continuous operation

Caution

When the air is in a continually supplied state for long periods of time, the recovery time may be delayed due to the adherence of the seal. Use caution when supplying air continually for long periods of time.

8 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

9 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor/importer.

SMC Corporation

URL : <https://www.smcworld.com> (Global) <https://www.smc.eu> (Europe)
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Specifications are subject to change without prior notice from the manufacturer.
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