



Instruction Manual

Electro-Pneumatic Regulator

ITV0000 Series



The intended use of the electro-pneumatic regulator is to control the flow and pressure of fluid in response to an input signal.

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/IEC¹⁾, and other safety regulations.

¹⁾ 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.

- This product is class A equipment intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted or radiated disturbances.

Caution

- Ensure that the air supply system is filtered to 5 microns.
- Refer to the SMC website (URL: <https://www.smcworld.com>) for more information about Safety Instructions.

2 Specifications

2.1 General specifications

Model	ITV001*	ITV003*	ITV005*	ITV009*
Min. supply pressure	(Set pressure) + 0.1 MPa			(Set pressure) -1 kPa
Max. supply pressure	0.2 MPa	1.0 MPa		-101 kPa
Set pressure range	0.001 to 0.1 MPa	0.001 to 0.5 MPa	0.001 to 0.9 MPa	-1 to -100 kPa
Supply voltage	24 VDC \pm 10%, 12 to 15 VDC			
Current consumption	0.12 A or less at 24 VDC 0.18 A or less at 12 to 15 VDC			
Input signal	Current type	4 to 20 mA DC, 0 to 20 mA DC (sink type)		
	Voltage type	0 to 5 VDC, 0 to 10 VDC		
Input impedance	Current type	Approx. 250 Ω		
	Voltage type	Approx. 10 Ω		
Analogue Output signal	1 to 5 VDC (impedance: approx. 1 k Ω)			
Output accuracy	\pm 6% F.S. or less			
Linearity	\pm 1% F.S. or less			
Hysteresis	0.5% F.S. or less			
Repeatability	\pm 0.5% F.S. or less			
Sensitivity	0.2% F.S. or less			
Temperature characteristics	\pm 0.12% F.S. / $^{\circ}$ C or less			
Ambient and fluid temperature	0 to 50 $^{\circ}$ C (no condensation)			
Enclosure rating	IP65			
Air connections	One touch fitting			
Weight	100 g			

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.

- This product is pre-set at the factory and must not be dismantled by the user. Contact your local SMC office for advice.
- Ensure, when installing this product, that it is kept clear of power lines to avoid noise interference.
- Ensure that load surge protection is fitted when inductive loads are present (i.e. solenoid, relay etc.).

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.

3.3 Piping

Caution

- 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 thread exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

3 Installation (continued)

3.4 Lubrication

Caution

- Do not use a lubricator on the input side of this product. If lubrication is required, place the lubricator on the 'output' side so that it does not enter the product.
- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is to be used in the system, refer to the catalogue for details.

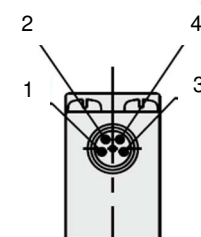
4 Wiring

Caution

Connect the cable to the connector on the main unit as shown in the following diagram. Take precautions, as incorrect wiring will damage the unit. Use a DC power supply capable of supplying the necessary power requirements with minimal ripple.

4.1 Connector details

M8 4 pin connector



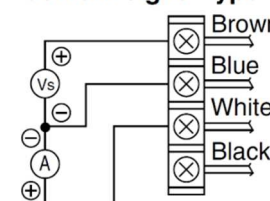
No.	Colour	Description
1	Brown	Power Supply
2	White	Input signal
3	Blue	GND (common)
4	Black	Output signal

Note: Wire colours shown are when the optional cable is used.

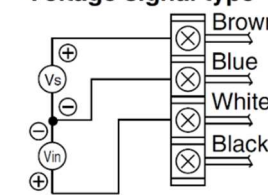
Caution

Note) Do not tighten the connector excessively to avoid breaking the connector pins.

Current signal type



Voltage signal type



Item	Name	Signal	Model No.
Vs	Power supply	24 VDC \pm 10%	ITV00*0-****
		12 to 15 VDC	ITV00*1-****
A	Input signal (current type)	4 to 20 mA	ITV00**-0***
		0 to 20 mA	ITV00**-1***
Vin	Input signal (voltage type)	0 to 5 VDC	ITV00**-2***
		0 to 10 VDC	ITV00**-3***

5 LED Display



LED	State	Description
PWR	LED is ON	Power is supplied
ERR	LED is flashing	Indicates an error. Input signal is outside specification. Turn the power OFF and then ON again.

6 How to Order

Refer to the operation manual or catalogue on the SMC website (URL: <http://www.smcworld.com>) for How to order information.

7 Outline Dimensions

Refer to the operation manual or catalogue on the SMC website (URL: <http://www.smcworld.com>) for outline dimensions.

8 Maintenance

8.1 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.
- Ensure all air is exhausted from the product before maintenance.

9 Limitations of Use

9.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

10 Product Disposal

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

11 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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