

## Compact Electro-Pneumatic Regulator Series ITV0000

## Compact Vacuum Regulator Series ITV0009

Compact 15 mm

With a simplified high-density circuit board design, an extremely compact size has been achieved.



Lightweight 100 g

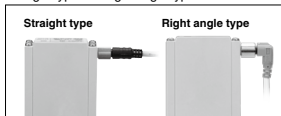
Realizes space-saving and reduction of weight for manifold use.

Stations can easily be increased or decreased due to DIN rail mount design.



### ■ Cable connectors

Straight type and right angle type are available.



### ■ Built-in One-touch fittings

### ■ With error indication LED

### ■ Brackets

Flat and L-brackets are available.



Flat bracket



L-bracket

### ● Equivalent to IP65

### ● Linearity: $\pm 1\%$ F.S. or less

Hysteresis: 0.5% F.S. or less

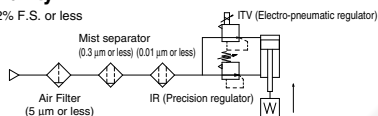
Repeatability:  $\pm 0.5\%$  F.S. or less

### ● High-speed response time: 0.1 sec (Without load)

(Note) This is not a guaranteed value as it depends on the operating environment.

### ● High stability

Sensitivity 0.2% F.S. or less



## Electro-Pneumatic Regulator Series ITV1000/2000/3000

## Electronic Vacuum Regulator Series ITV209



ITV1000

ITV2000

ITV3000

ITV2090



Serial communications specifications to Series ITV1000/2000/3000 are standardized.

### ● Reduced wiring

Applicable Fieldbus protocols



RS-232C specification to serial communications is standardized.

### ● Sensitivity: 0.2% F.S. or less

### ● Linearity: $\pm 1\%$ F.S. or less

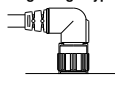
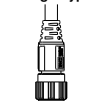
### ● Hysteresis: 0.5% F.S. or less

### ● IP65

### ● Cable connections in 2 directions

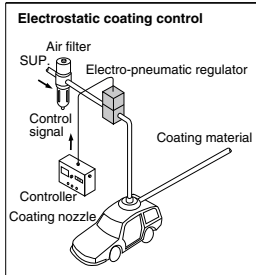
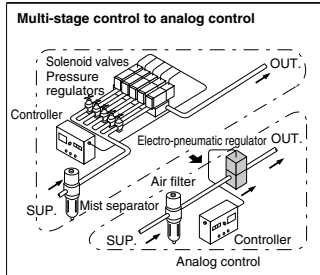
Straight type

Right angle type



### ● Grease-free specification (Series ITV1000)

### ● Application examples








# Electro-Pneumatic Regulator

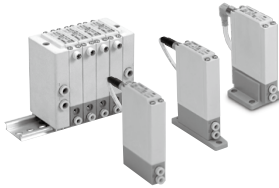
# Electronic Vacuum Regulator

## Series *ITV*

● Stepless control of air pressure proportional to an electrical signal.

	Series	Model	Set pressure range	Input signal	Port size	Page	ARJ
Electro-Pneumatic Regulator	Series <i>ITV0000</i>	 <b>ITV001</b> □	0.001 to 0.1 MPa	Current type: 4 to 20 mA DC (Sink type) Current type: 0 to 20 mA DC (Sink type) Voltage type: 0 to 5 VDC Voltage type: 0 to 10 VDC	Built-in One-touch fittings Metric size: ø4 Inch size: ø5/32	806	AR425 to 935
		<b>ITV003</b> □	0.001 to 0.5 MPa				ARX
		<b>ITV005</b> □	0.001 to 0.9 MPa				AMR
	Series <i>ITV1000</i>	 <b>ITV101</b> □	0.005 to 0.1 MPa	Current type: 4 to 20 mA DC (Sink type) Current type: 0 to 20 mA DC (Sink type) Voltage type: 0 to 5 VDC Voltage type: 0 to 10 VDC Preset input (4 points/16 points) 10 bit digital input CC-Link compatible	1/8, 1/4	814	ARPM
		<b>ITV103</b> □	0.005 to 0.5 MPa				ARPP
		<b>ITV105</b> □	0.005 to 0.9 MPa				IR
	Series <i>ITV2000</i>	 <b>ITV201</b> □	0.005 to 0.1 MPa	Current type: 4 to 20 mA DC (Sink type) Current type: 0 to 20 mA DC (Sink type) Voltage type: 0 to 5 VDC Voltage type: 0 to 10 VDC Preset input (4 points/16 points) 10 bit digital input CC-Link compatible DeviceNet™ compatible PROFIBUS DP compatible RS-232C communication	1/4, 3/8	814	IRV
		<b>ITV203</b> □	0.005 to 0.5 MPa				VEX
		<b>ITV205</b> □	0.005 to 0.9 MPa				SRH
Series <i>ITV3000</i>	 <b>ITV301</b> □	0.005 to 0.1 MPa	DeviceNet™ compatible PROFIBUS DP compatible RS-232C communication	1/4, 3/8, 1/2	814	SRP	
	<b>ITV303</b> □	0.005 to 0.5 MPa				SRF	
	<b>ITV305</b> □	0.005 to 0.9 MPa				VCHR	
Electronic Vacuum Regulator	Series <i>ITV009</i> □	 <b>ITV009</b> □	-1 to -100 kPa	Current type: 4 to 20 mA DC (Sink type) Current type: 0 to 20 mA DC (Sink type) Voltage type: 0 to 5 VDC Voltage type: 0 to 10 VDC	Built-in One-touch fittings Metric size: ø4 Inch size: ø5/32	836	ITV
	Series <i>ITV209</i> □	<b>ITV209</b> □	-1.3 to -80 kPa	Current type: 4 to 20 mA DC (Sink type) Current type: 0 to 20 mA DC (Sink type) Voltage type: 0 to 5 VDC Voltage type: 0 to 10 VDC Preset input (4 points/16 points) 10 bit digital input CC-Link compatible DeviceNet™ compatible PROFIBUS DP compatible RS-232C communication	1/4	843	IC
							ITVX

## Specifications



Model	ITV001□	ITV003□	ITV005□
Minimum supply pressure	Set pressure +0.1 MPa		
Maximum supply pressure	0.2 MPa	1.0 MPa	
Set pressure range	0.001 to 0.1 MPa	0.001 to 0.5 MPa	0.001 to 0.9 MPa
Power supply	Voltage	24 VDC ±10%, 12 to 15 VDC	
	Current consumption	Power supply voltage 24 VDC type: 0.12 A or less Power supply voltage 12 to 15 VDC type: 0.18 A or less	
Input signal	Voltage type	0 to 5 VDC, 0 to 10 VDC	
	Current type	4 to 20 mA DC, 0 to 20 mA DC (Sink type)	
Input impedance	Voltage type	Approx. 10 kΩ	
	Current type	Approx. 250 Ω	
Output signal <sup>Note 4)</sup>	Analog output	1 to 5 VDC (Output impedance: Approx. 1 kΩ) Output accuracy: ±6% F.S. or less	
Linearity	±1% F.S. or less		
Hysteresis	0.5% F.S. or less		
Repeatability	±0.5% F.S. or less		
Sensitivity	0.2% F.S. or less		
Temperature characteristics	±0.12% F.S./°C or less		
Operating temperature range	0 to 50°C (No condensation)		
Enclosure	Equivalent to IP65 *		
Connection type	Built-in One-touch fittings		
Connection size	For single unit	Metric size	①, ②, ③: ø4
		Inch size	①, ②, ③: ø5/32"
	Manifold	Metric size	①, ③: ø6, ②: ø4
		Inch size	①, ③: ø1/4", ②: ø5/32"
Weight <sup>Note 1)</sup>	100 g or less (without option)		

Note 1) Indicates the weight of a single unit.

For IITV00-n

Total weight (g) Stations (n) x 100 + 130 (Weight of end block A, B assembly) + Weight (g) of DIN rail

Note 2) When there is a downstream flow consumption, pressure may become unstable depending on piping conditions.

Note 3) When the input signal is at 0%, the exhaust solenoid valve is controlled to reduce the outlet pressure to zero. For this reason, a noise may be generated. This noise is normal and does not indicate a fault.

Note 4) When measuring ITV analog output from 1 to 5 VDC, if the load impedance is less than 100 kΩ, the analog output monitor accuracy of ±6% F.S. or less may not be available. The product with the accuracy of within ±6% is supplied upon your request.

Output pressure remains unaffected.

\* When using under the conditions equivalent to IP65, connect the fitting or tube to the breathing hole prior to use. (For details, refer to "Specific Product Precautions 1" on page 849)

## Accessories (Option)

### Bracket

Flat bracket assembly (includes 2 mounting screws)  
P39800022



L-bracket assembly (includes 2 mounting screws)  
P39800023



Tightening torque when assembling is 0.3 N-m.

### Cable connector

Straight type  
M8-4DSX3MG4



Right angle type  
P398000-501-2



ARJ

AR425  
to 935

ARX

AMR

ARM

ARP

IR

IRV

VEV

SRH

SRP

SRF

VCHR

ITV

IC

ITVX

PVQ

VEF  
VEP

VER

VEA

VY1

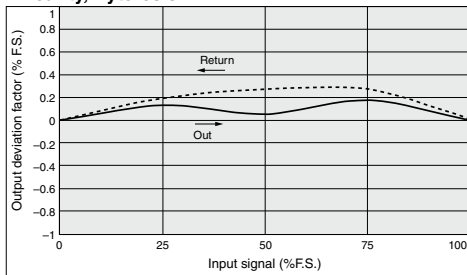
VBA  
VBAT

AP100

# Series ITV0000

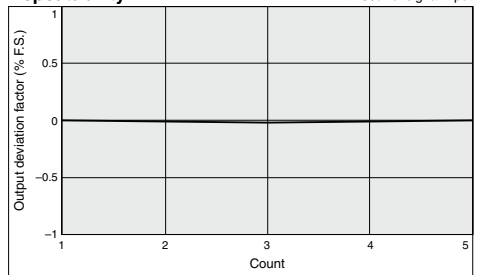
## Series ITV005

### Linearity, Hysteresis



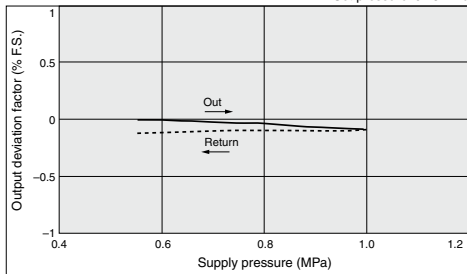
### Repeatability

With 50% of signal input



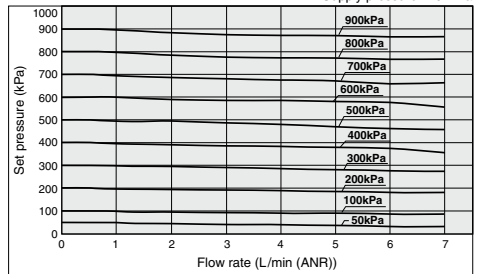
### Pressure Characteristics

Set pressure: 0.45 MPa









### Flow Characteristics

Supply pressure: 1.0 MPa



# 435 psi (3.0 MPa) Maximum Supply Pressure High Pressure Electro-Pneumatic Regulator

## Variation Map

Series	Model	Max. supply pressure				Set pressure range				Port size	Maximum flow rate
		0.2	1.0	3.0	5.0	0.001	1.0	3.0	5.0		
435 psi (3.0 MPa) Maximum Supply Pressure High Pressure Electro-Pneumatic Regulator  <b>Series</b> <b>ITVH</b>	<b>ITVH2020</b>	435 psi [3.0 MPa]				29 psi [0.2 MPa] to 290 psi [2.0 MPa]				1/4 3/8	<b>106 scfm</b> <b>[3000 L/min (ANR)]</b> ( Supply pressure: 435 psi (3.0 MPa) Set pressure: 145 psi (1.0 MPa) )
Compact Electro-Pneumatic Regulator <b>Series</b> <b>ITV0000</b> 	<b>ITV001</b> □	29 psi [0.2 MPa]				0.15 psi [0.001MPa] to 15 psi [0.1MPa]				Built-in One-touch fittings ø4 ø5/32	<b>0.21 scfm</b> <b>[6 L/min (ANR)]</b> ( Supply pressure: 145 psi (1.0 MPa) Set pressure: 87 psi (0.6 MPa) )
	<b>ITV003</b> □	145 psi [1.0MPa]				0.15 psi [0.001MPa] to 73 psi [0.5MPa]					
	<b>ITV005</b> □	145 psi [1.0MPa]				0.15 psi [0.001MPa] to 131 psi [0.9MPa]					
Electro-Pneumatic Regulator <b>Series</b> <b>ITV1000</b> 	<b>ITV101</b> □	29 psi [0.2 MPa]				7.3 psi [0.005MPa] to 15 psi [0.1MPa]				1/8 1/4	<b>7.06 scfm</b> <b>[200 L/min (ANR)]</b> ( Supply pressure: 145 psi (1.0 MPa) Set pressure: 87 psi (0.6 MPa) )
	<b>ITV103</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 73 psi [0.5MPa]					
	<b>ITV105</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 131 psi [0.9MPa]					
Electro-Pneumatic Regulator <b>Series</b> <b>ITV2000</b> 	<b>ITV201</b> □	29 psi [0.2 MPa]				7.3 psi [0.005MPa] to 15 psi [0.1MPa]				1/4 3/8	<b>53.0 scfm</b> <b>[1500 L/min (ANR)]</b> ( Supply pressure: 145 psi (1.0 MPa) Set pressure: 87 psi (0.6 MPa) )
	<b>ITV203</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 73 psi [0.5MPa]					
	<b>ITV205</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 131 psi [0.9MPa]					
Electro-Pneumatic Regulator <b>Series</b> <b>ITV3000</b> 	<b>ITV301</b> □	29 psi [0.2 MPa]				7.3 psi [0.005MPa] to 15 psi [0.1MPa]				1/4 3/8 1/2	<b>141 scfm</b> <b>[4000 L/min (ANR)]</b> ( Supply pressure: 145 psi (1.0 MPa) Set pressure: 87 psi (0.6 MPa) )
	<b>ITV303</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 73 psi [0.5MPa]					
	<b>ITV305</b> □	145 psi [1.0MPa]				7.3 psi [0.005MPa] to 131 psi [0.9MPa]					
5.0 MPa Maximum Supply Pressure High Pressure Electro-Pneumatic Regulator <b>Series</b> <b>ITVX</b> 	<b>ITVX2030</b>	725 psi (5.0 MPa)				1.5 psi [0.01MPa] to 435 psi [3.0MPa]				3/8	<b>106 scfm</b> <b>[3000 L/min (ANR)]</b> ( Supply pressure: 725 psi (5.0 MPa) Set pressure: 435 psi (3.0 MPa) )

For details,  
refer to the  
**WEB catalog**  
or  
**Best Pneumatics**



Page 803



Page 863

\* The outlet of the ITVX series is released to the atmosphere for blowing