TITV

Electro-Pneumatic Regulator

-Deeply integrate advanced technologies
-Break through traditional boundaries
-Bring infinite possibilities to industrial automation

TEAOTE Technology

www.teaote.com

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Control Components

TITV Series

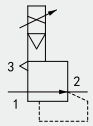
Electro-Pneumatic Regulator

Our company reserves the right to make improvements in technology, appearance and dimensions. Any changes will be made without further notice.

Electro-Pneumatic Regulator

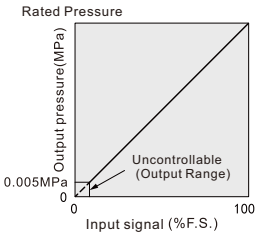
TITV1000 · 2000 · 3000 Series

Symbol



TITV1000
Max. Flow
200L/min(ANR)

TITV2000
Max. Flow
1500L/min(ANR)



(Figure 1) Input-Output Relationship Diagram

TITV3000
Max. Flow
4000L/min(ANR)

Specification

Model		TITV101□ Note7)	TITV103□ Note7)	TITV105□ Note7)
		TITV201□	TITV203□	TITV205□
		TITV301□	TITV303□	TITV305□
Min. Supply Pressure		Set Pressure: +0.1MPa		
Max.Supply Pressure		0.2MPa	1. 0MPa	
Set Pressure Range Note1)		0.005~0.1MPa	0.005~0.5MPa	0.005~0.9MPa
Power	Voltage	Wide Voltage:DC10~26V		
	Current Consumption	Power Supply Voltage DC 24V Type: Below 0.14A		
		Power Supply Voltage DC 12~15V Type: Below 0.14A		
Power		≤3.5W		
Input Signal	Current Type Note2)	DC4~20mA、DC0~20mA		
	Voltage Type	DC0~5V、DC0~10V		
	Preset Input Type	4 Point (-COM)、16 Point (N-COM)		
Input impedance	Current Type Note2)	Below 250Ω Note6)		
	Voltage Type	约6.5KΩ		
	Preset Input Type	DC24V type: 4.7kΩ DC12V type: 2.0kΩ		
Output Signal (Monitoring Output) Note3)	Simulated Output	DC1~5V(Output Resistance:1kΩ) DC4~20mA (Output Resistance: Below 250Ω) Output accuracy: within +6% F.S.		
	Switch Output	NPN open-collector output: Maximum 30V, 80mA PNP open-collector output: Maximum 80mA		
Linearity Note8)		Within ±1.0% F.S.		
Hysteresis Note8)		≤0.5% F.S.		
Repeatability Note8)		Within ±0.5% F.S.		
Sensitivity Note8)		Within 0.2% F.S.		
Temperature Characteristics Note8)		Within ±0.05% F.S./°C		
Output Pressure Display Note4)	Precision	Within ±2%F.S.±1digit		
	Min. Unit	MPa:0.001,kgf/cm²:0.01,bar:0.01, psi:0.1 Note5) kPa: 1		
Operating Temperature		0~50°C(No condensation)		
Protection		IP65		
Weight		TITV10□□ 240g、TITV20□□ 330g、TITV30□□620g		

Note 1) The relationship between the set pressure and the input. Please refer to Figure 1.
Note 2) 2-wire type DC 4~20mA cannot be used. The required power supply voltage is (DC 24V or DC 12~15V).
Note 3) Select either analog output or switch output. When selecting switch output, either NPN output or PNP output can be chosen. When the load resistance is below 100kΩ and measuring the TITV DC1~5V analog output, the analog monitoring output may not achieve an output accuracy within ±6% of full scale. If you require accuracy within ±6%, please consult us separately. Additionally, this does not affect the output pressure.
Note 4) Adjustments such as zero-point, full-scale, and preset values are set starting from the smallest display unit of the output pressure. (Example: 0.001~0.5MPa).
Note 5) The minimum unit for the 0.9MPa (130psi) type is 1psi.
Note 6) The value does not include the state of the overcurrent circuit. If taking the overcurrent circuit into consideration, the input resistance will change according to the input current. In the case of an input current of DC 20mA, it will be 350Ω or less.

Note 7) The TITV1000 series is of non-grease specification (contact fluid part).
Note 8) The above characteristics are limited to static conditions; in cases where air is consumed on the output side, the pressure may fluctuate.

How To Order

TITV 2 0 5 0 - 0 1 2 - S

Series	
1	1000Type
2	2000Type
3	3000Type

Pressure Range	
1	0~0. 1MPa (0~1bar)
3	0~0. 5MPa (0~5bar)
5	0~0. 9MPa (0~9bar)

Power Supply Voltage	
0	DC 24V
1	DC 12~15V

Input	
0	4~20mA
1	0~20mA
2	DC 0~5V
3	DC 0~10V

Output	
Nil	Non
1	DC 1~5V
2	NPN
3	PNP
4	4~20mA

Nil	Non (Preset input only)
40	4-point preset input
52	16-point preset input (switch output, NPN output)
53	16-point preset input (switch output, PNP output)

Thread Type	
Nil	Rc Thread
G	G Thread
N	NPT Thread

Port Size	
1	1/8" (1000) Type
2	1/4" (1000,2000,3000) Type
3	3/8" (2000,3000) Type
4	1/2" (3000)Type

Accessories	
Nil	Non
B	Horizontal Bracket
C	L-shaped Bracket

Cable	
Nil	Non
S	Linear Type(3m)
L	Right-Angle Type(3m)

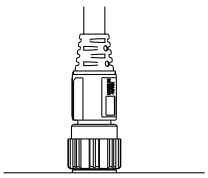
Unit	
Nil	MPa
2	kgf/cm²
3	bar
4	psi
5	kPa

Electro-Pneumatic Regulator

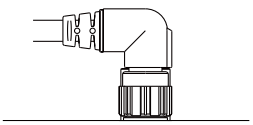
TITV1000 · 2000 · 3000 Series

Product Features and Usage Examples

- Infinite regulation of pressure.
- Remote pressure control function.
- Pressure regulation system simplified, reduced components.
- The response speed is fast.
- High precision.
- Power failure protection function.
- Sensitivity : Remote pressure control function within 0.2% F.S.
- Linearity:Within ±1% F.S.
- Hysteresis:Within 0.5% F.S.
- No Lubricant Specifications (TITV1000 Series)
- Cables can be routed in two directions.



Direct type



Right-angle type

Unique Advantages

Wide Voltage Adaptability
The wider adaptation range of supply voltage is 10-28V.

Multi-unit Selection
Multiple pressure units available for user selection on the screen (psi, MPa, kPa,kgf/cm²,bar)

Overvoltage Protection
The power supply voltage overvoltage protection function (8V~28V)

Misconnection Protection
Friendly on-site connection tolerance ensures that the product will not be damaged even if the power line is connected to the signal line.

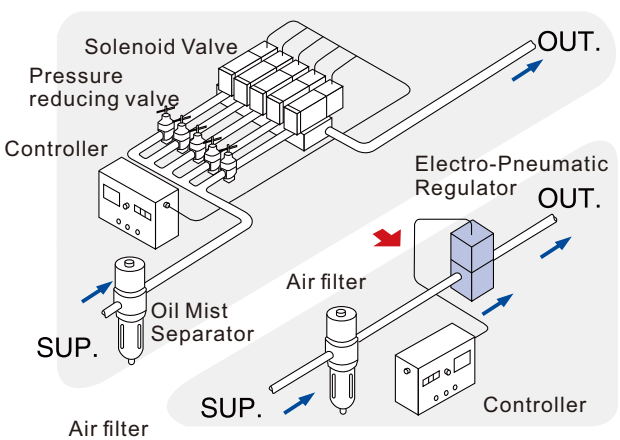
Output Soft Settings
NPN/PNP selection can be configured on the screen.

High-precision Temperature Compensation
High-precision temperature drift compensation characteristics

Smaller Temperature Drift
From the general temperature characteristic: improved from within ±0.12%F.S.°C to within ±0.05%F.S.°C.)

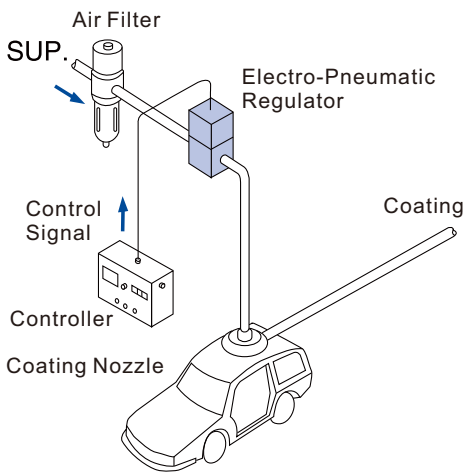
Unique Algorithm
Through Self-learning AI algorithms, dynamically adjust the start and stop of control valves to reduce the number of adjustments and extend the service life of the control valves.

Simulation control of multi-level control



Simulation Control

Electrostatic Coating Control



Electro-Pneumatic Regulator

TITV1000 · 2000 · 3000 Series

Application Areas

PCB Spraying Machine

Semiconductor Industry

Mechanical Manufacturing

Laser Cutting

Automobile Manufacturing

Pharmaceutical Manufacturing

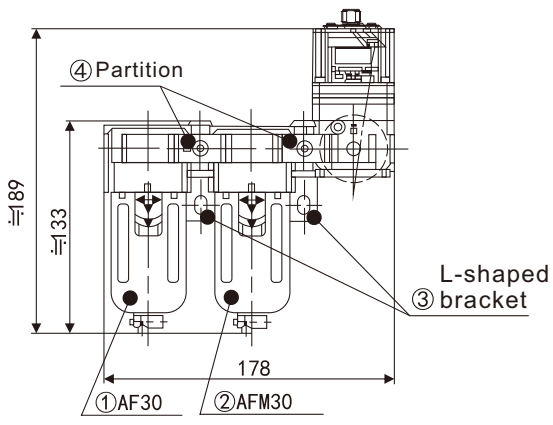
Printing and Packaging

Application Product and Accessories Combination Table

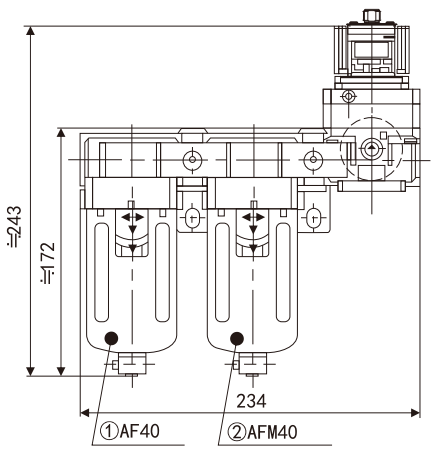
Application Products and Accessories Names	Applicable Models	
	TITV20 □□	TITV30 □□
① Air filter	AF30	AF40
② Oil mist separator	AFM30	AFM40
③ L-shaped bracket	B310L	B410L
④ Partition	Y30	Y40
⑤ Partition with L-shaped bracket (③+④)	Y30L	Y40L
⑥ Partition withT-shaped bracket	–	Y40T

* In the case of TITV10□□, please use a modular adapter.

TITV20□□



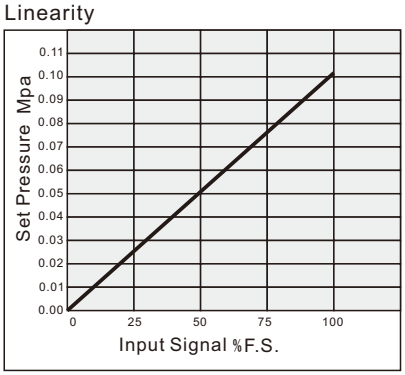
TITV30□□



Product Feature Diagram

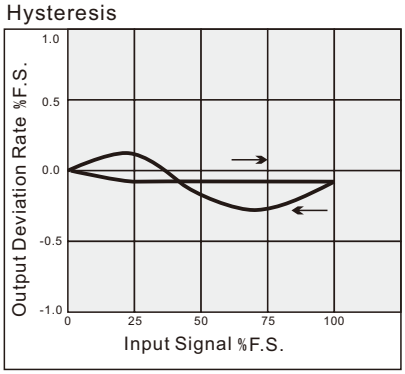
TITV101□Series

Linearity

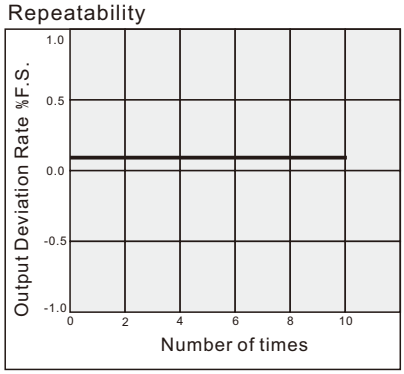


Output Deviation Rate

Hysteresis

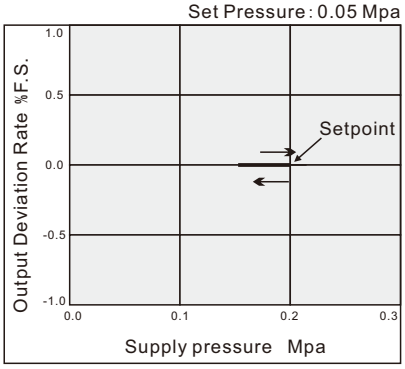


Repeatability



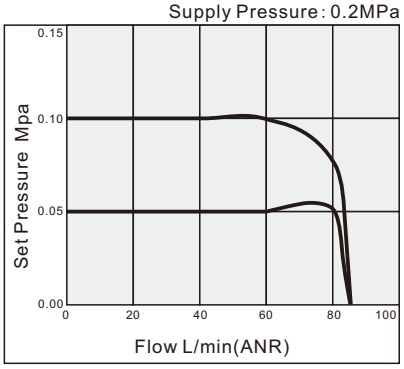
Stress Characteristics

Set Pressure : 0.05 Mpa



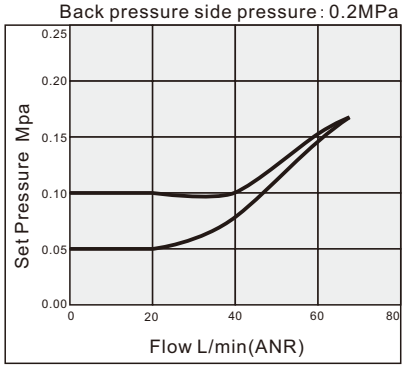
Traffic Characteristics

Supply Pressure : 0.2MPa



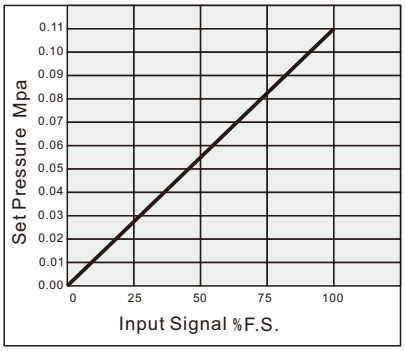
Overflow characteristics

Back pressure side pressure : 0.2MPa

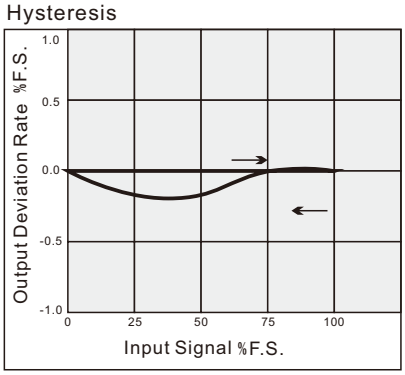


TITV201□Series

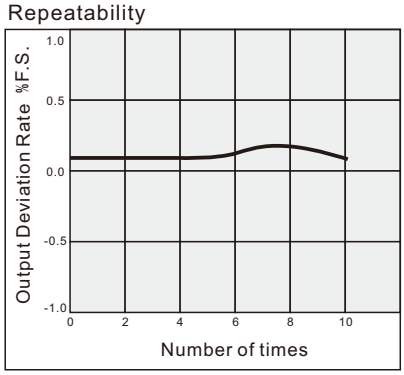
Linearity



Hysteresis

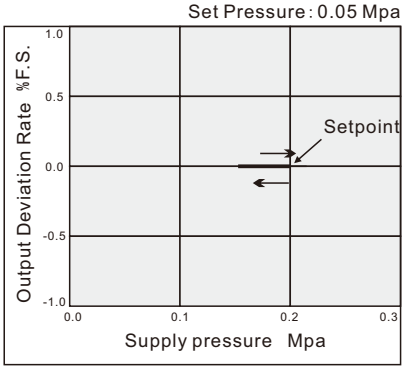


Repeatability



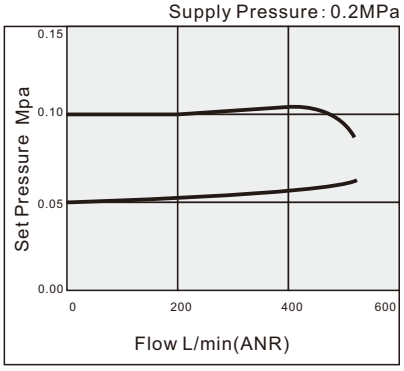
Stress Characteristics

Set Pressure : 0.05 Mpa



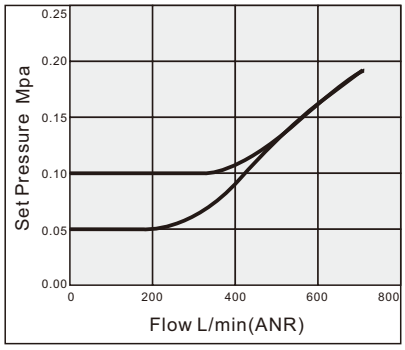
Traffic Characteristics

Supply Pressure : 0.2MPa



Overflow characteristics

Back pressure side pressure : 0.2MPa



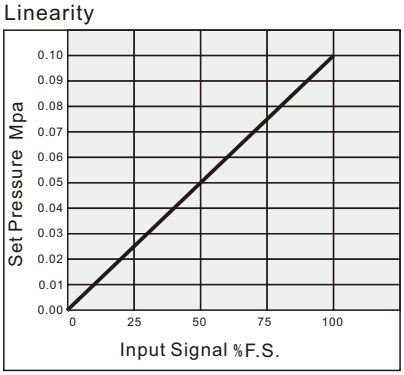
Electro-Pneumatic Regulator

TITV1000 · 2000 · 3000 Series

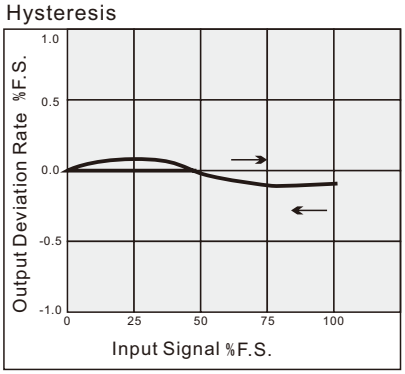
Product Feature Diagram

TITV301□Series

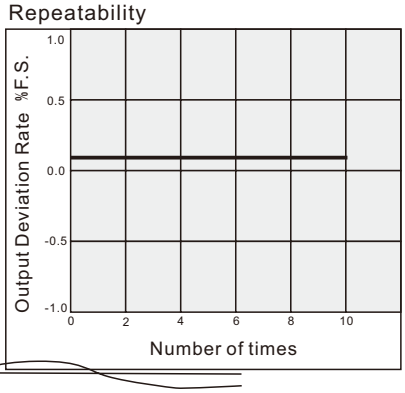
Linearity



Hysteresis

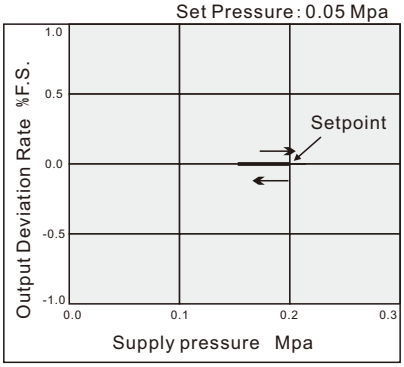


Repeatability



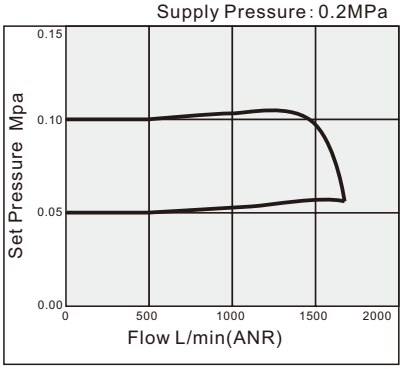
Stress Characteristics

Set Pressure : 0.05 Mpa



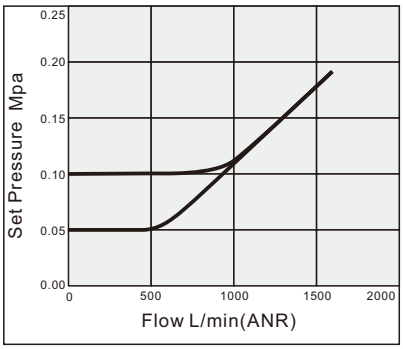
Traffic Characteristics

Supply Pressure : 0.2MPa



Overflow characteristics

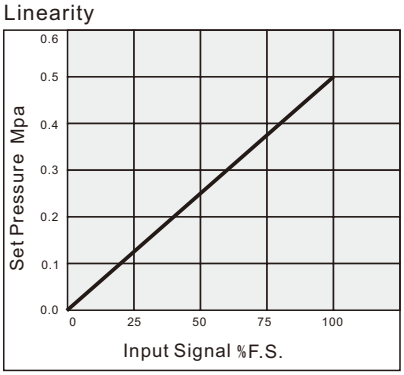
Back pressure side pressure : 0.2MPa



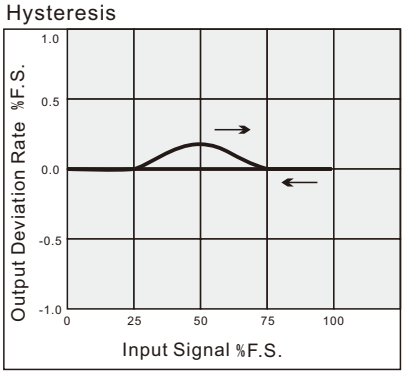
Product Feature Diagram

TITV103□Series

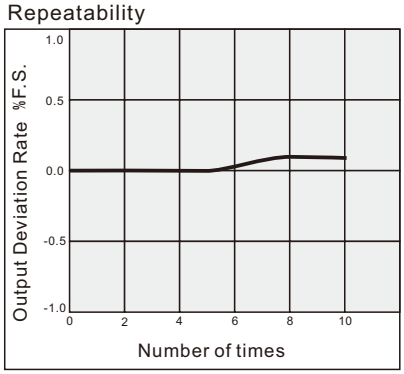
Linearity



Hysteresis

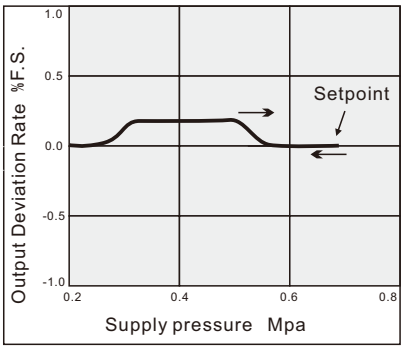


Repeatability



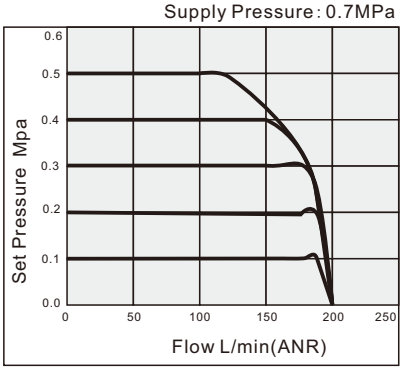
Stress Characteristics

Set Pressure : 0.2 Mpa



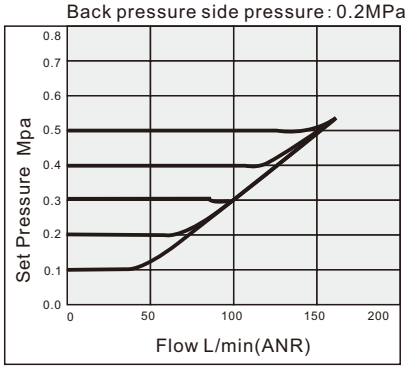
Traffic Characteristics

Supply Pressure : 0.7MPa



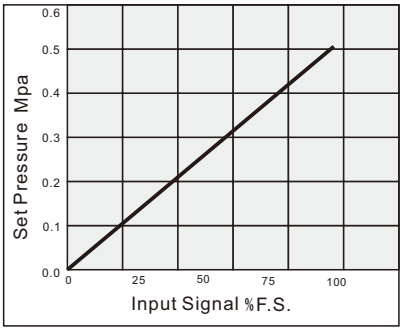
Overflow characteristics

Back pressure side pressure : 0.2MPa

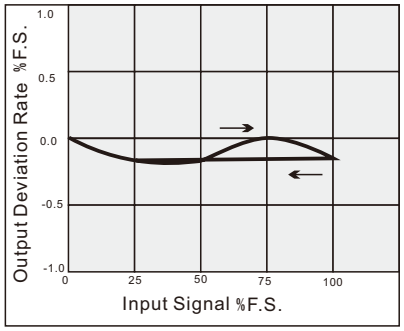


TITV203□Series

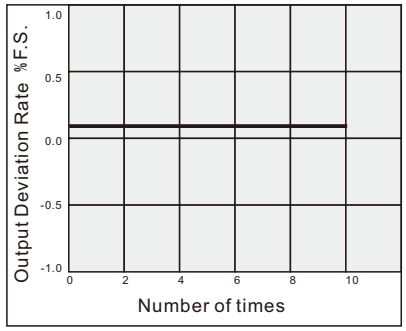
Linearity



Hysteresis

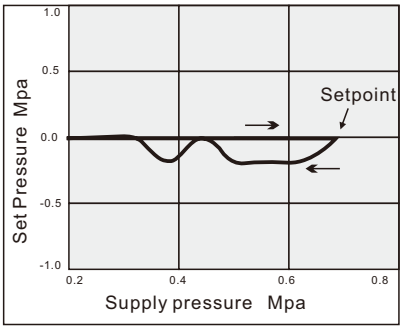


Repeatability



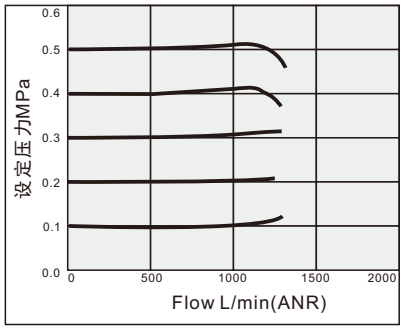
Stress Characteristics

Set Pressure : 0.2 Mpa



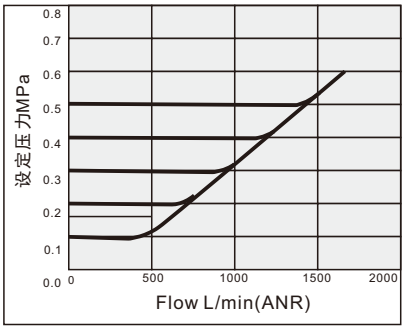
Traffic Characteristics

Supply Pressure : 0.7MPa



Overflow characteristics

Back pressure side pressure : 0.7MPa



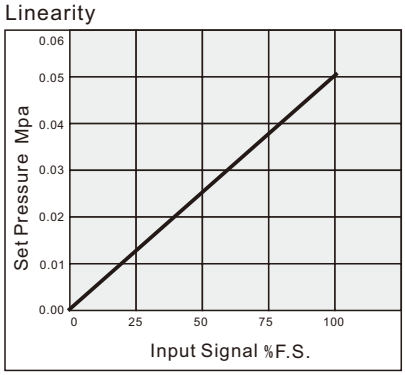
Electro-Pneumatic Regulator

TITV1000 · 2000 · 3000 Series

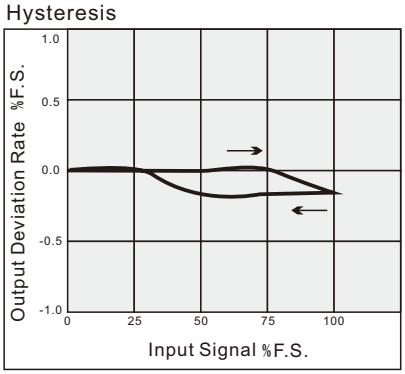
Product Feature Diagram

TITV303□Series

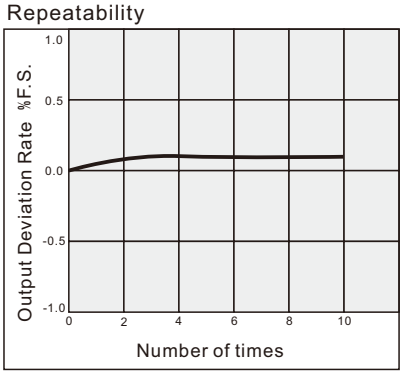
Linearity



Hysteresis

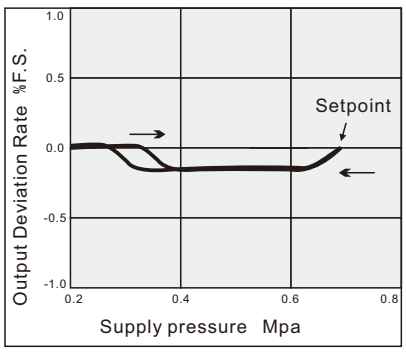


Repeatability



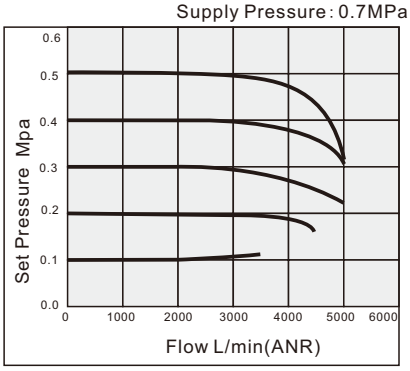
Stress Characteristics

Set Pressure : 0.2 Mpa



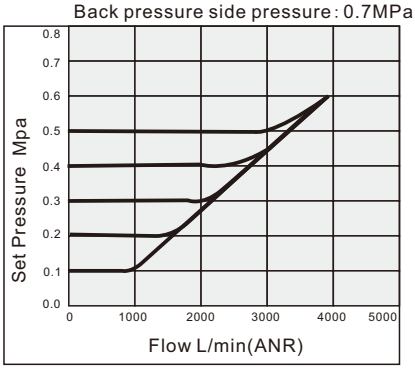
Traffic Characteristics

Supply Pressure : 0.7MPa



Overflow characteristics

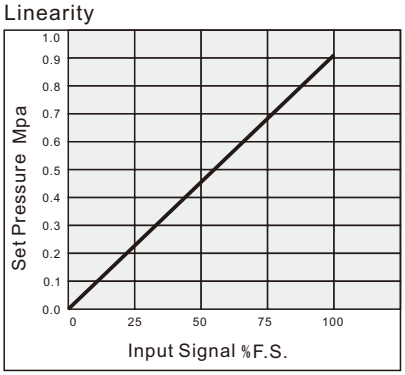
Back pressure side pressure : 0.7MPa



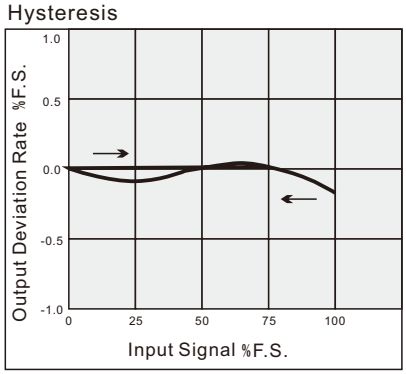
Product Feature Diagram

TITV105□Series

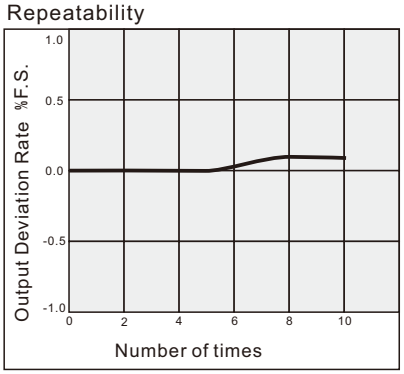
Linearity



Hysteresis

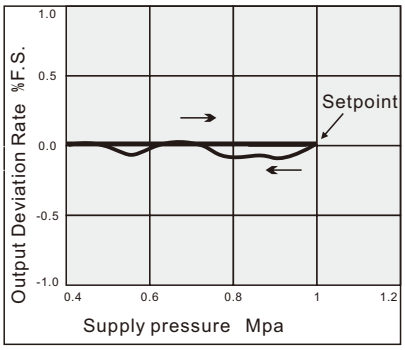


Repeatability



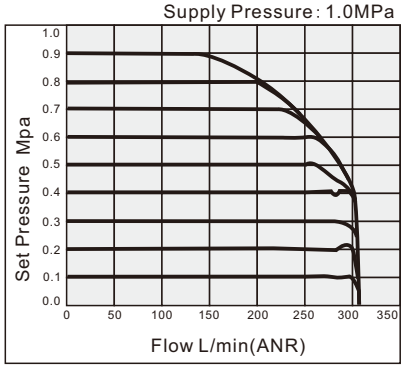
Stress Characteristics

Set Pressure : 0.4 Mpa



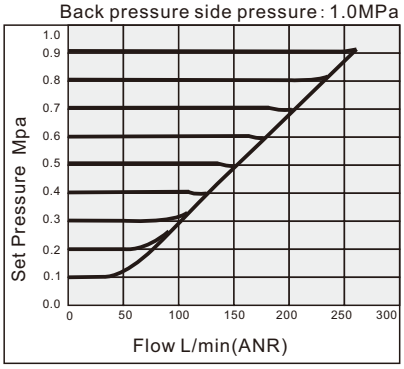
Traffic Characteristics

Supply Pressure : 1.0MPa



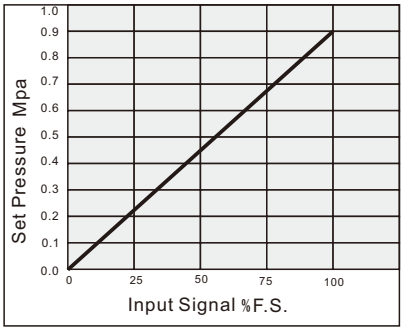
Overflow characteristics

Back pressure side pressure : 1.0MPa

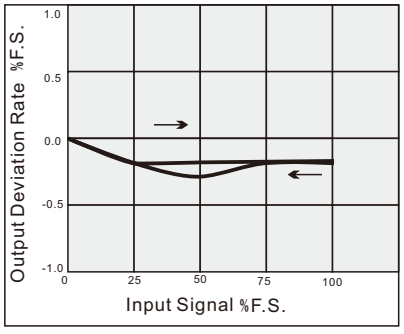


TITV205□Series

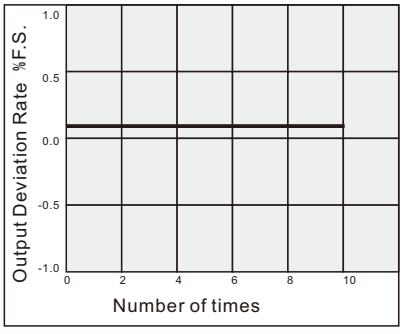
Linearity



Hysteresis

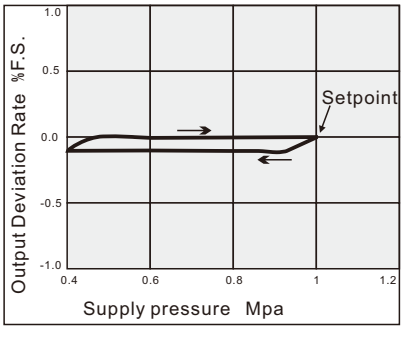


Repeatability



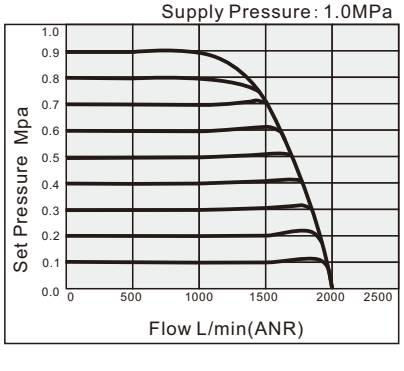
Stress Characteristics

Set Pressure : 0.4 Mpa



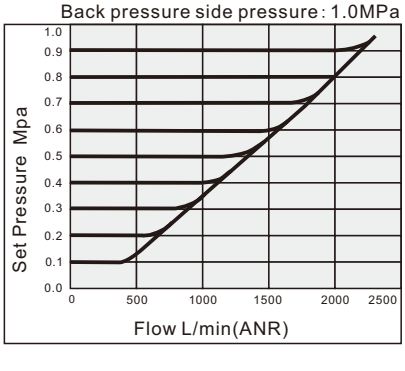
Traffic Characteristics

Supply Pressure : 1.0MPa



Overflow characteristics

Back pressure side pressure : 1.0MPa



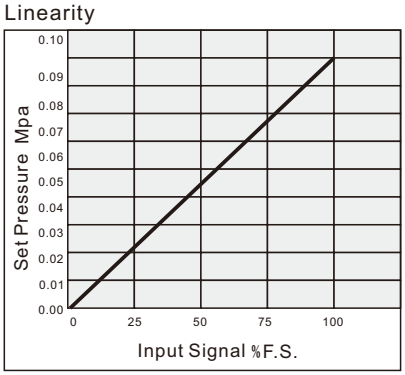
Electro-Pneumatic Regulator

TITV1000 · 2000 · 3000 Series

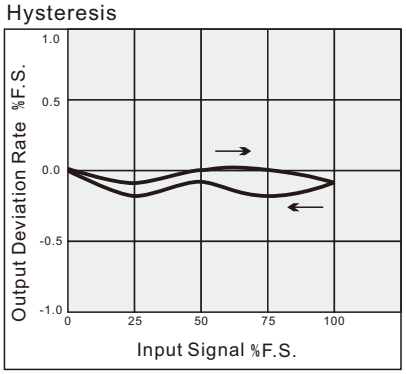
Product Feature Diagram

TITV305□Series

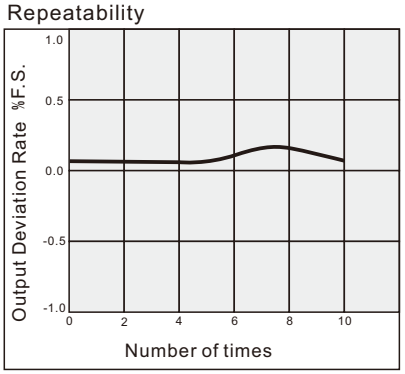
Linearity



Hysteresis

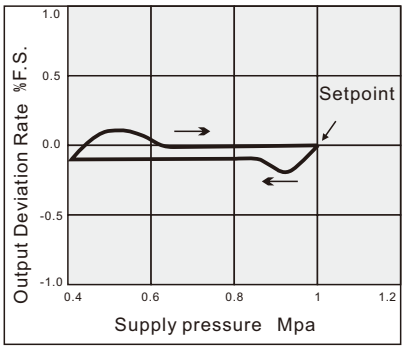


Repeatability



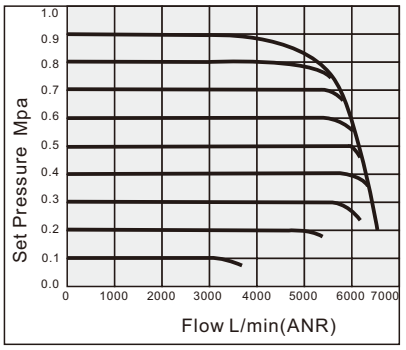
Stress Characteristics

Set Pressure : 0.4 Mpa



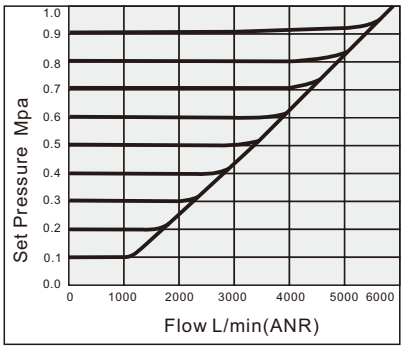
Traffic Characteristics

Supply Pressure : 1.0MPa



Overflow characteristics

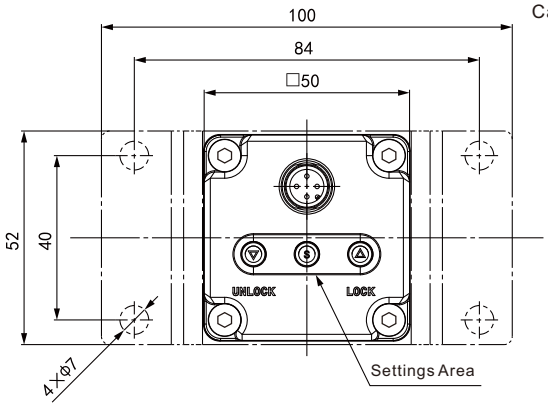
Back pressure side pressure : 1.0MPa

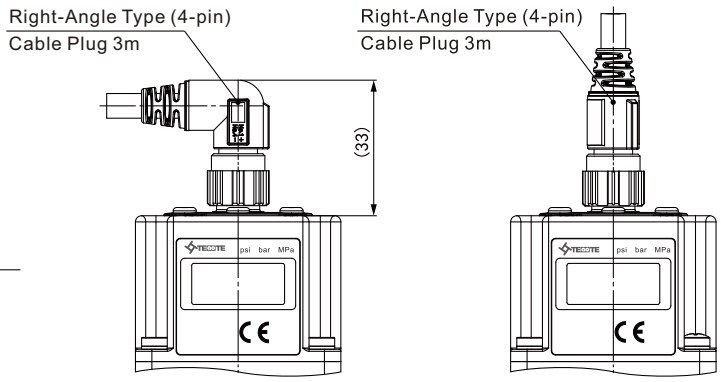


Appearance and Dimensions

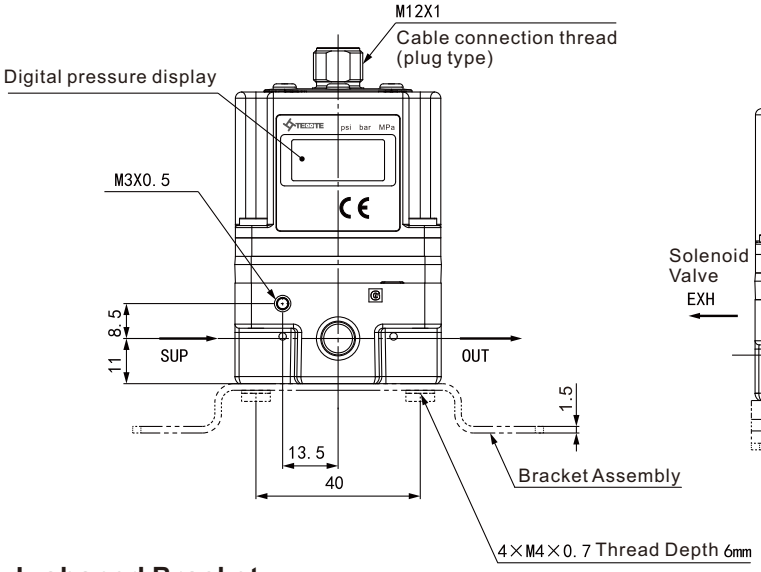
TITV10□□

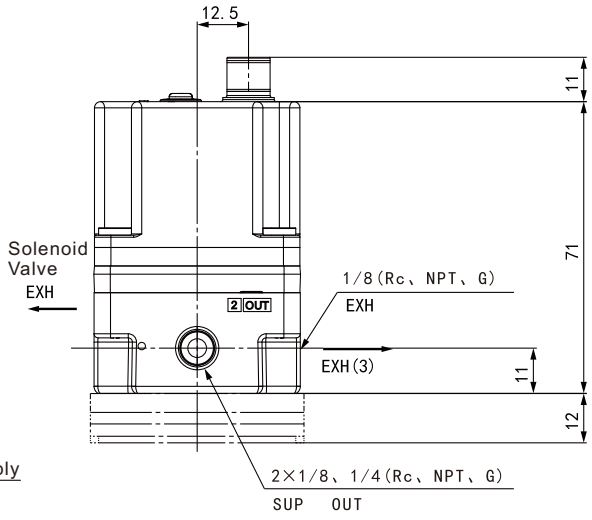
Horizontal Bracket



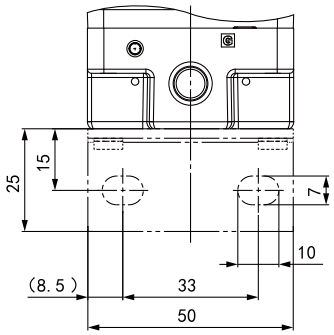


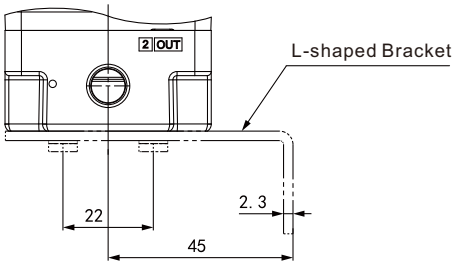
Note: The cable plug itself cannot be rotated;
Do not attempt to turn it.





L-shaped Bracket

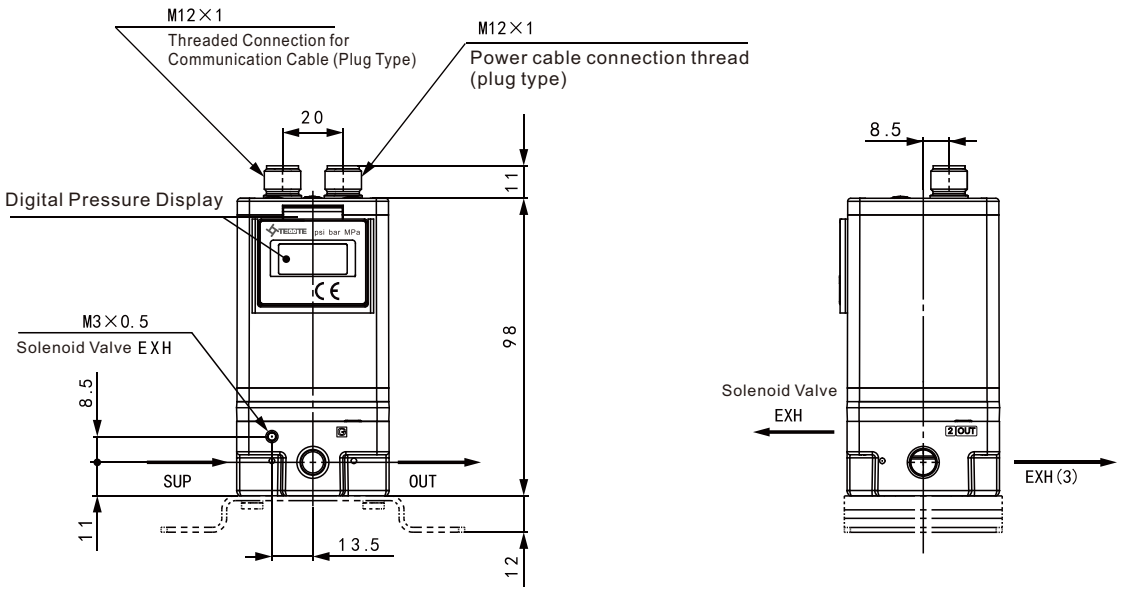




Appearance and Dimensions

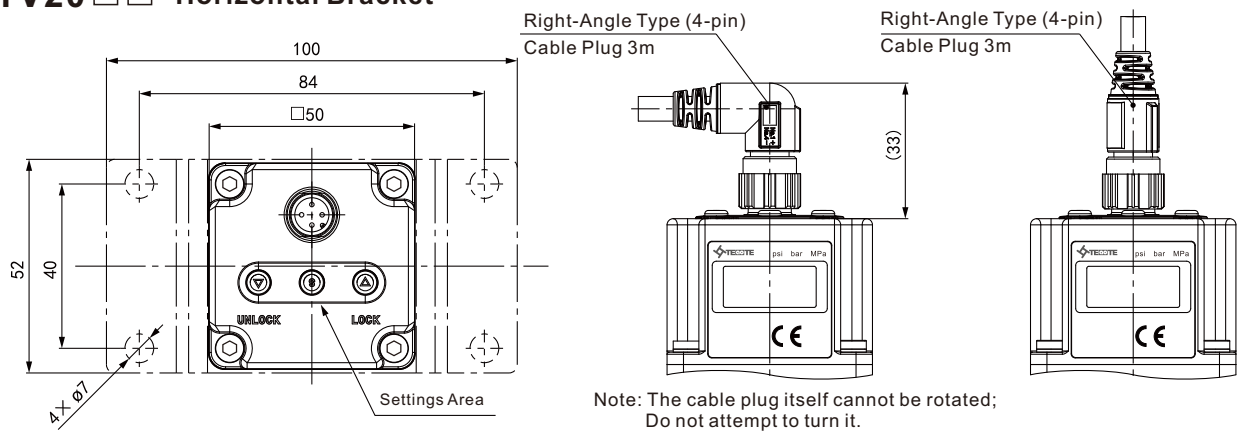
TITV10□□

16 Preset Inputs

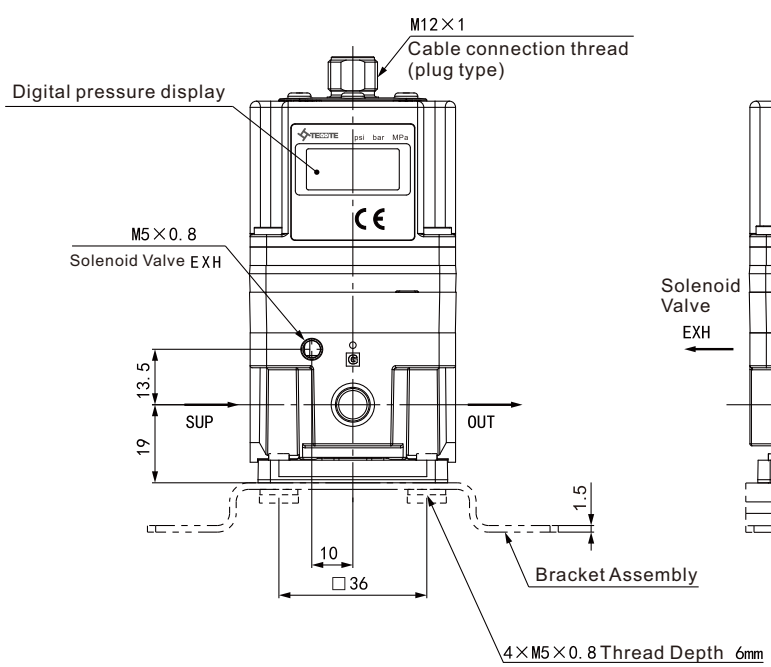


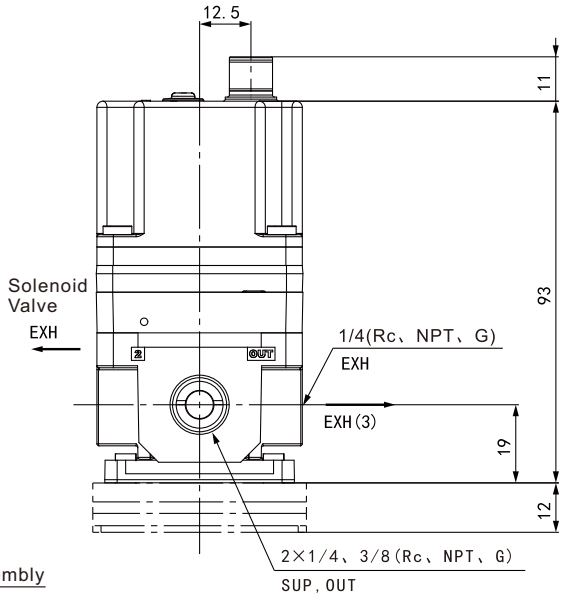
Appearance and Dimensions

TITV20□□ Horizontal Bracket

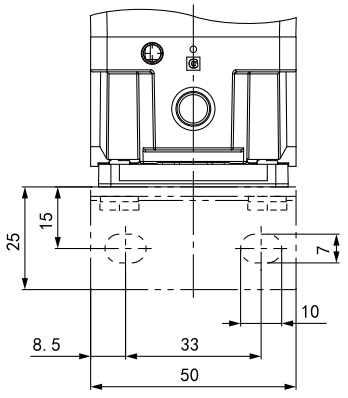


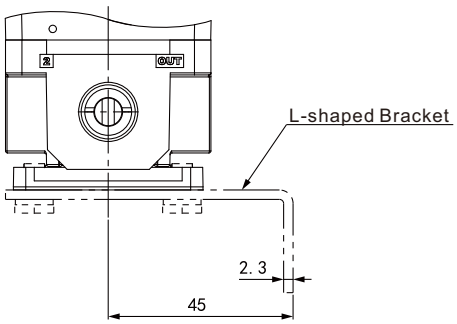
Note: The cable plug itself cannot be rotated;
Do not attempt to turn it.





L-shaped Bracket

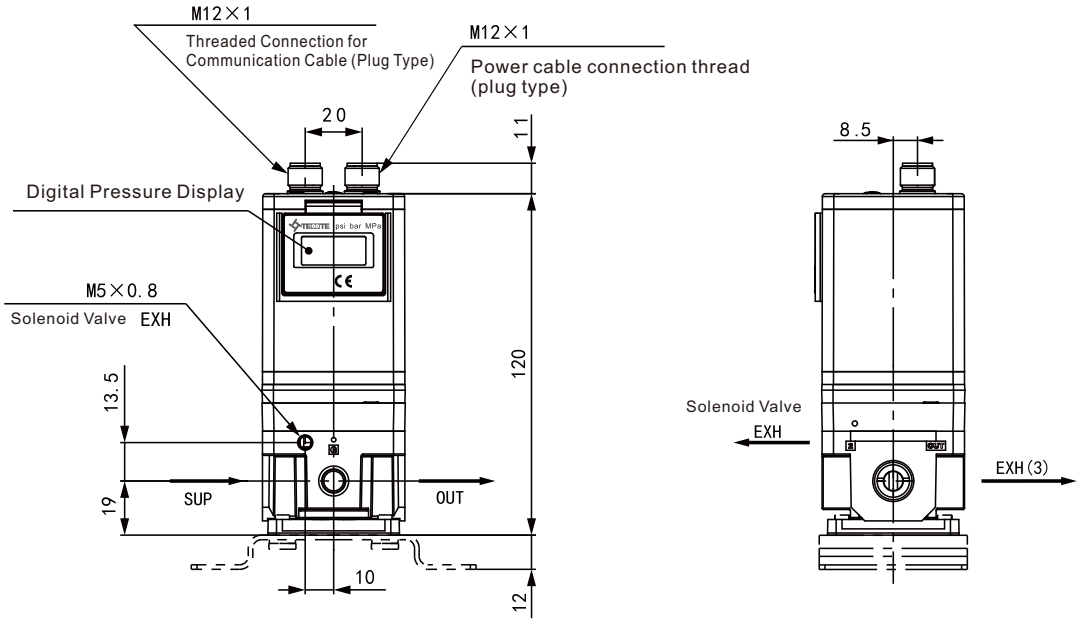




电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

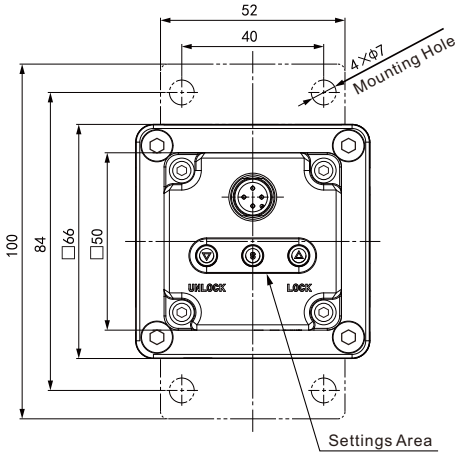
Appearance and Dimensions(外型及尺寸)

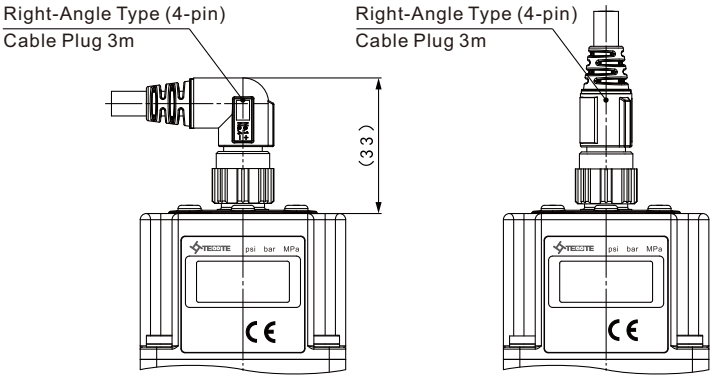
TITV20□□ 16 Preset Inputs



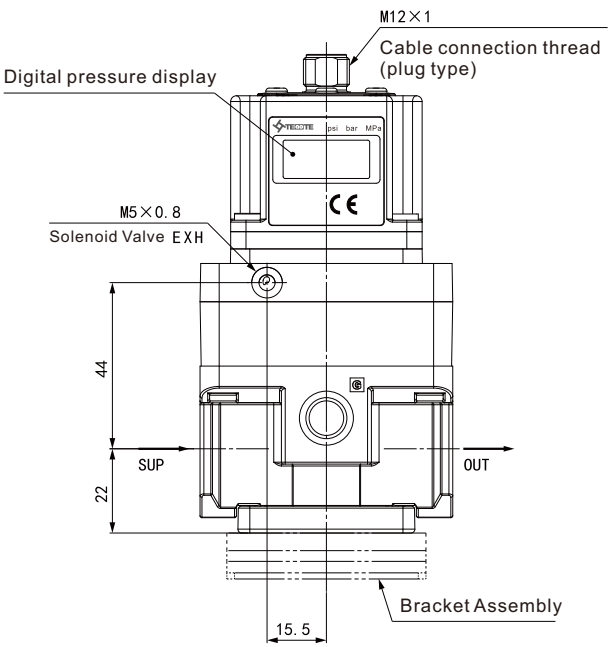
Appearance and Dimensions

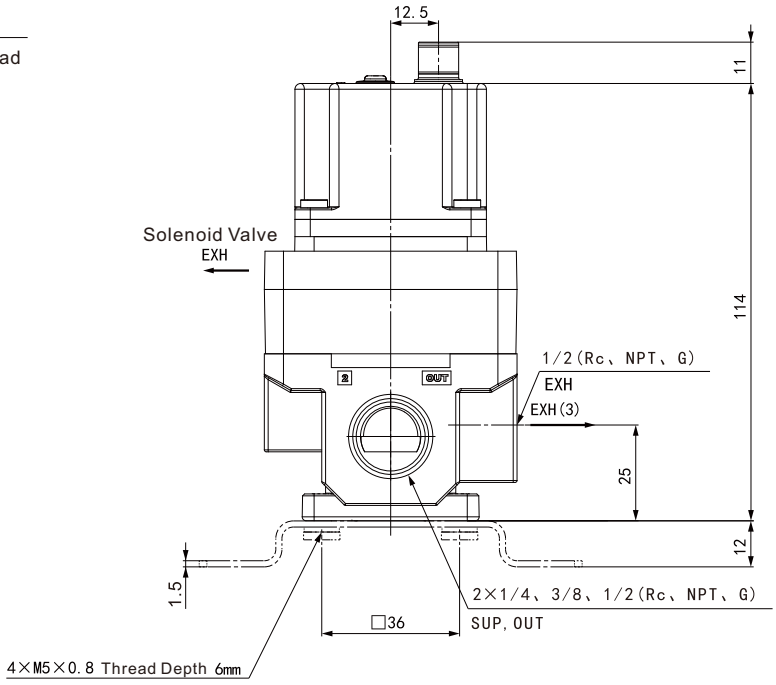
TITV30□□ Horizontal Bracket



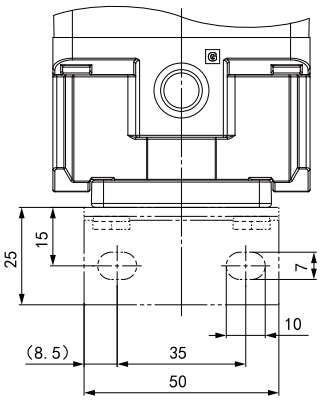


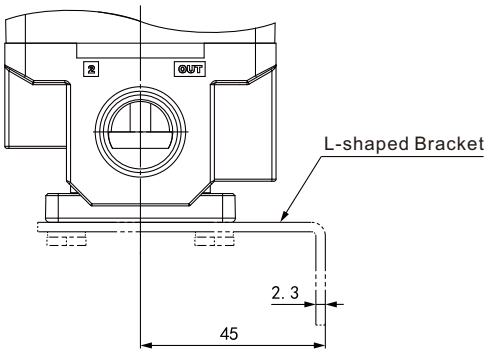
Note: The cable plug itself cannot be rotated;
Do not attempt to turn it.





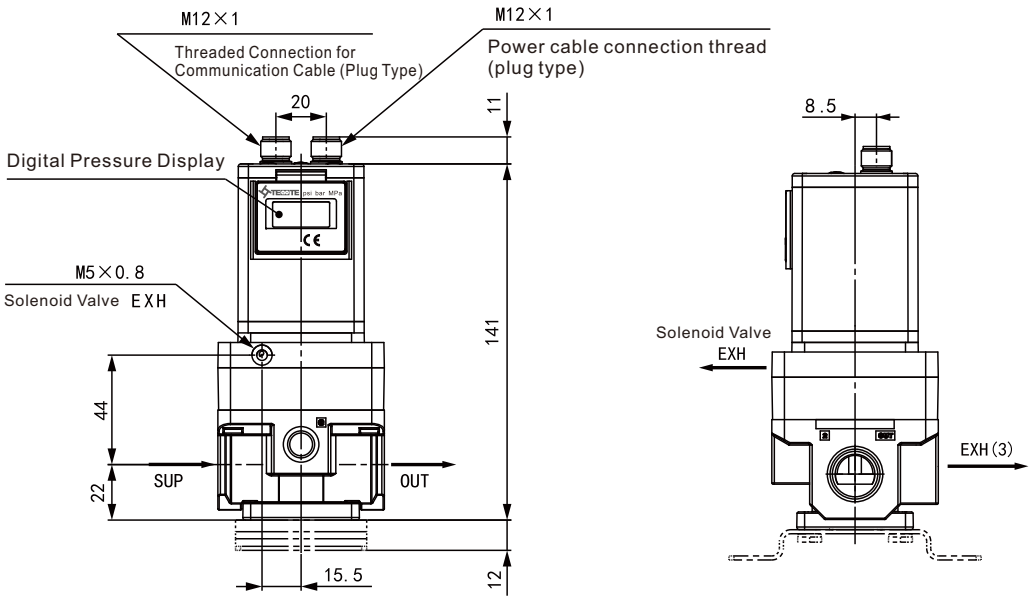
L-shaped Bracket





Appearance and Dimensions

TITV30 □□ 16 Preset Inputs

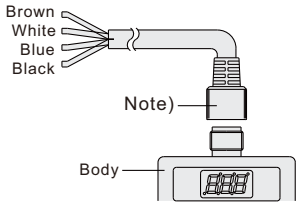


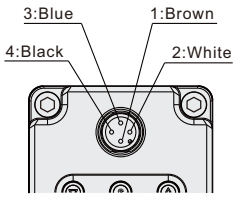
Distribution and Signal

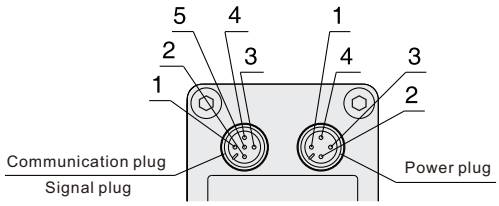
Wiring Method

Attention

When the cable plug is connected to the socket of this product, please wire it according to the following instructions. Incorrect wiring may cause damage to the product, so please exercise caution. Additionally, please use a DC power supply with sufficient capacity and minimal fluctuations







16 preset inputs

Current signal type

Voltage Signal Type

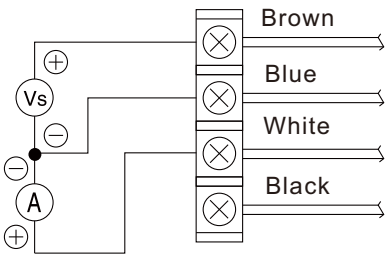
1	Brown	Supply power
2	White	Input Signal
3	Blue	GND(COMMON)
4	Black	Monitoring output

Preset input type

1	Brown	Supply power
2	White	Input Signal 1
3	Blue	GND(COMMON)
4	Black	Input Signal 2

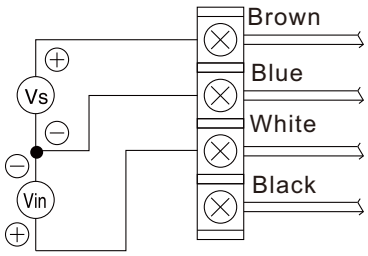
Input Signal Wiring Diagram

Current signal type



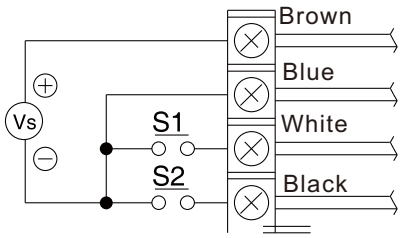
Vs :Power supply DC24V
DC12~15V
A : Input Signal DC4~20mA
DC0~20mA

Voltage Signal Type



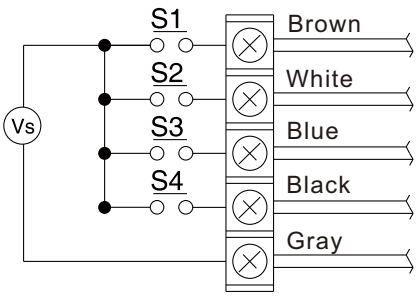
Vs : Power supply DC24V
DC12~15V
Vin : Input Signal DC0~5V
DC0~10V

4 Preset Input Types



Vs : Power supply DC24V
DC12~15V
(-COM)

16 Preset Input Types



Vs: Power supply DC24V (non-polarity)

Distribution and Signal

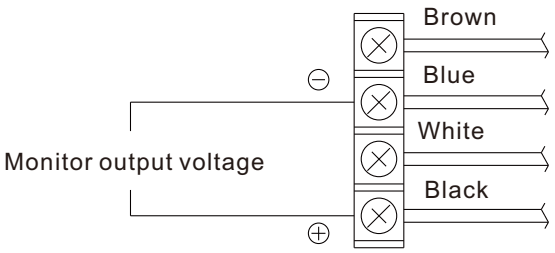
According to the ON and OFF combinations of S1 and S2, select one of the preset pressures P1~P4.

S1	OFF	ON	OFF	ON	OFF	···	ON	OFF	ON
S2	OFF	OFF	ON	ON	OFF		OFF	ON	ON
S3	OFF	OFF	OFF	OFF	ON		ON	ON	ON
S4	OFF	OFF	OFF	OFF	OFF		ON	ON	ON
Preset pressure	P01	P02	P03	P04	P05		P14	P15	P16

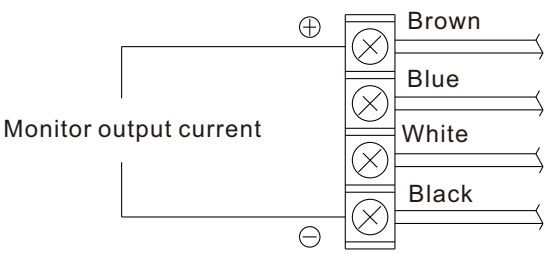
*In addition, for safety reasons, the recommended preset pressure for one setting is 0 Mpa.

Monitoring Output Wiring Diagram

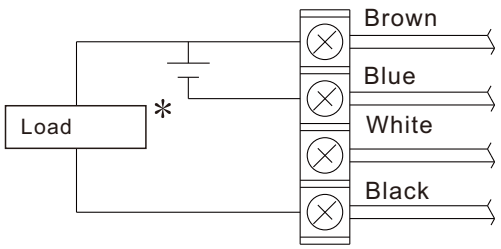
Simulation output voltage type



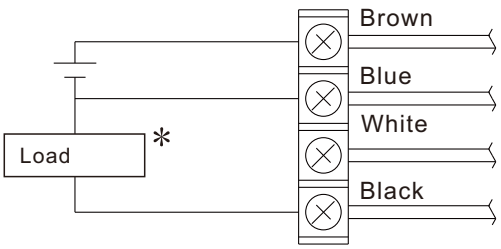
Current output simulation (source type)



Switch Output NPN Type



Switch Output PNP Type



* If a current of more than DC 80mA flows, the overcurrent detection function will trigger an error alarm. (Error code "5")

Set pressure range

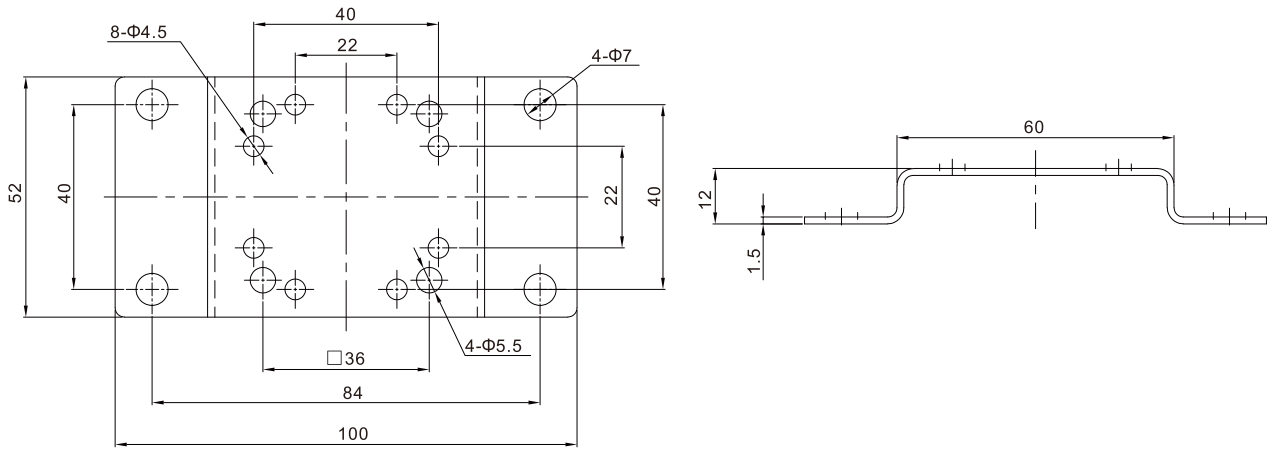
Unit	Set pressure range		
	TITV□01□	TITV□03□	TITV□05□
MPa	0.005~0.1	0.005~0.5	0.005~0.9
kgf/cm²	0.05~1	0.05~5	0.05~9
bar	0.05~1	0.05~5	0.05~9
psi	0.7~14.5	0.7~72.5	0.7~130
kPa	5~100	5~500	5~900

Accessories

Bracket

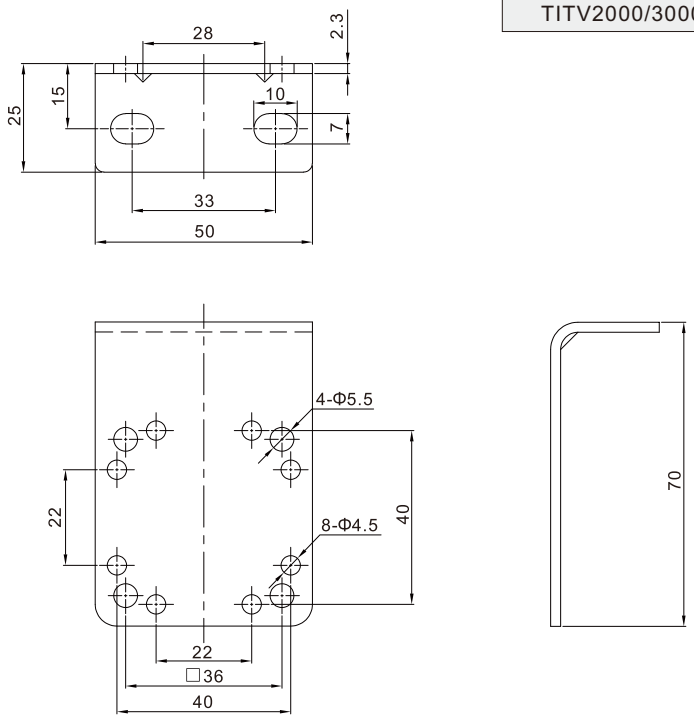
Name	Order Code	Weight
Pinto Bracket Assembly (with Mounting Screws)	F-TITV-B	75g
L-shaped bracket assembly (with mounting screws)	F-TITV-C	85g

Pinto Bracket



Model	Bracket Fastening Torque
TITV1000	0.76±0.05N·m
TITV2000/3000	1.5±0.05N·m

L-shaped Bracket



Electro-Pneumatic Regulator

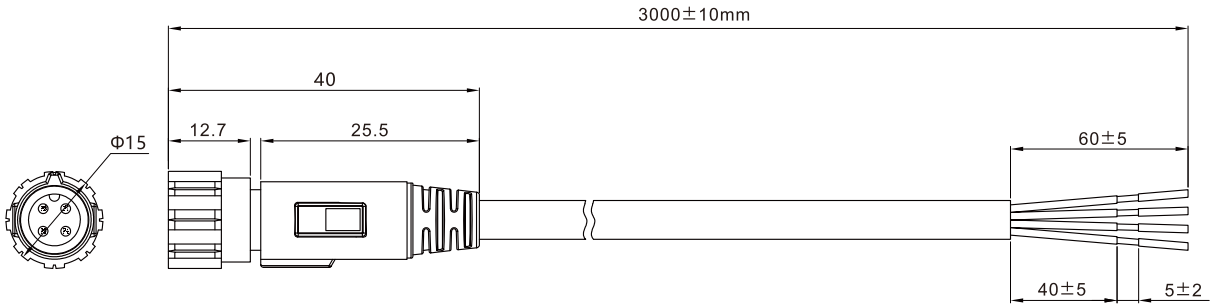
TITV1000 · 2000 · 3000 Series

Accessories

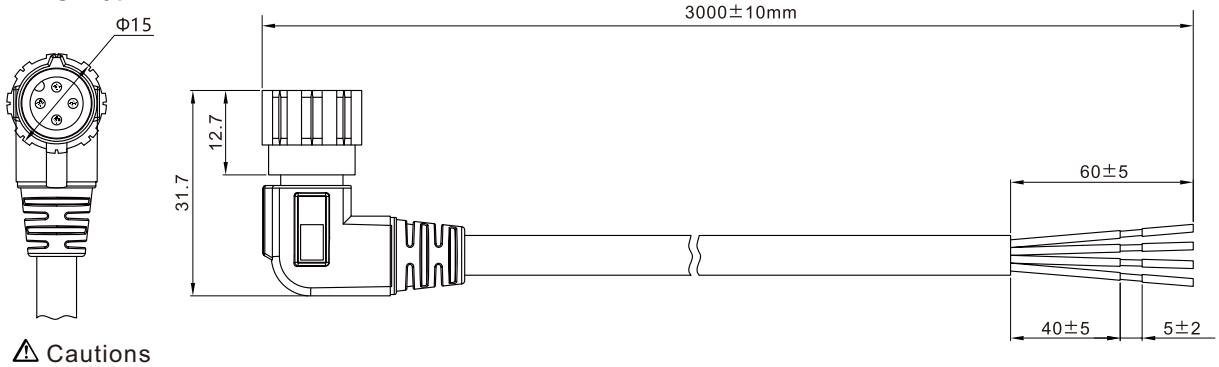
Cable plug

Corresponding model	Name		Order Code	Weight
Current type Voltage type 4-point preset input	Cable plug (4-pin)	Straight type 3m	F-TITV-S	170g
		Right-angle type 3m	F-TITV-L	
16-point preset input	Power plug (4-pin)	Straight type 3m	F-TITV-S	170g
		Right-angle type 3m	F-TITV-L	

Direct type



Right-angle type



⚠ Cautions

1. The gas supply pressure must pass through an air filter with a filtration precision below 5μm.
2. When installing joint pipelines, prevent threaded debris and sealing materials from entering the pipeline, which may block the small valve air inlet.
3. Compressed air containing condensate entering the product may cause malfunction; please ensure proper air circuit drying.
4. If the power is suddenly cut off during the pressurization stage, the “OUT” output will enter a power-off protection state, and the pressure will briefly remain constant.
5. The product undergoes comprehensive index testing before delivery. Disassembly is strictly prohibited, as it may cause product instability.
6. The four-core cable assembly can only be installed in one direction. After assembly, do not rotate it. Forcible rotation will damage the connector assembly.
7. The sequence for energizing and supplying air to the product is: power on → supply air → cut off air → power off.
8. When using this product in areas with strong electric fields, wiring should be as far away as possible to avoid external interference affecting product operation.
9. The product may generate a sound when the solenoid valve operates, but this does not affect parameter settings or product use.
10. When the four-core cable is not used for monitoring output, avoid contact with other cables, which may cause malfunction.

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