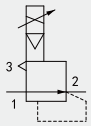
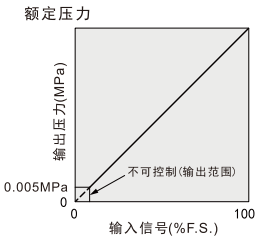
电-气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

图形符号



TITV1000
Max. Flow(最大流量)
200L/min(ANR)

TITV2000
Max. Flow(最大流量)
1500L/min(ANR)



(图1) 输入输出关系图

TITV3000
Max. Flow(最大流量)
4000L/min(ANR)

Specification(规格)

Model(型号)		TITV101□ 注7)	TITV103□ 注7)	TITV105□ 注7)
		TITV201□	TITV203□	TITV205□
		TITV301□	TITV303□	TITV305□
Min. Supply Pressure(最低供给压力)		Set Pressure(设定压力)+0.1MPa		
Max.Supply Pressure(最高供给压力)		0.2MPa	1. 0MPa	
Set Pressure Range(设定压力范围) 注1)		0.005~0.1MPa	0.005~0.5MPa	0.005~0.9MPa
Power(电源)	Voltage(电压)	DC24V±10%、DC12~15V		
	Current Consumption(消耗电流)	电源电压DC24V型: 0.14A以下		
		电源电压DC12~15V型: 0.14A以下		
Power(功率)		≤3.5W		
Input Signal(输入信号)	Current Type(电流型) 注2)	DC4~20mA、DC0~20mA(汇式)		
	Voltage Type (电压型)	DC0~5V、DC0~10V		
	Preset Input Type(预置输入型)	4点(-COM)、16点(无COM极性)		
Input impedance(输入阻抗)	Current Type(电流型) 注2)	250Ω以下 注6)		
	Voltage Type (电压型)	约6.5KΩ		
	Preset Input Type(预置输入型)	电源电压DC24V型:约4.7kΩ 电源电压DC12V型:约2.0kΩ		
Output Signal (Monitoring Output) 注3) 输出信号(监控输出)	Simulated Output (模拟输出)	DC1~5V(输出电阻: 约1kΩ) DC4~20mA(汇式)(输出电阻:250Ω以下) 输出精度±6%F.S.之内		
	Switch Output (开关输出)	NPN集电极开路输出:最大30V、80mA PNP集电极开路输出:最大80mA		
Linearity(直线性) 注8)		±1.0% F.S.之内		
Hysteresis(迟滞) 注8)		≤0.5% F.S.		
Repeatability(重复性) 注8)		±0.5% F.S.之内		
Sensitivity(灵敏度) 注8)		0.2% F.S.之内		
Temperature Characteristics(温度特性) 注8)		±0.05% F.S./°C之内		
Output Pressure Display (输出压力显示) 注4)	Precision(精度)	±2%F.S.±1digit之内		
	Min. Unit (最小单位)	MPa:0.001,kgf/cm²:0.01,bar:0.01, psi:0.1 注5) kPa: 1		
Operating Temperature(使用温度)		0~50°C(未结露)		
Protection (防护等级)		IP65		
Weight (重量)		TITV10□□约240g、TITV20□□ 约330g、TITV30□□约620g		

注1)设定压力与输入的关系。请参照图1。
注2)2线式DC4~20mA不可使用。所需电源电压为(DC24V或DC12~15V)。
注3)选择模拟输出或开关输出的其中一个。选择开关输出时, NPN输出和PNP输出可任选其一。负载电阻100kΩ以下, 测量TITV的DC1~5V模拟输出时, 模拟监控输出可能无法获得±6%之内(满量程)的输出精度。如果您需要±6%之内的请另行咨询。另外, 不会影响输出压力。
注4)零值、满值调整和预置型等的数值调整为从输出压力的显示最小单位开始的设定。(例0.001~0.5MPa)。
注5)0.9MPa(130psi)型的最小单位为1psi。
注6)不含过电流回路状态的值.考虑过电流回路的话, 根据输入电流, 输入电阻会变化. 输入电流DC20mA的场合为350Ω以下

注7)TITV1000系列为非润滑脂规格(接触流体部)。
注8)上述特性仅限于静态, 输出侧消耗空气的场合, 压力可能会变动。

How To Order(型号表示方法)

TITV 2 0 5 0 - 0 1 2 - S

Series 系列

1	1000型
2	2000型
3	3000型

Pressure Range 压力范围

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

Power Supply Voltage 电源电压

0	DC 24V
1	DC 12~15V

Input 输入信号

0	4~20mA(电流型)
1	0~20mA(电流型)
2	DC 0~5V(电压型)
3	DC 0~10V(电压型)

Output 电信号输出(监控信号)

Nil(空)	无(只限预设输入)
1	DC 1~5V模拟输出
2	开关输出(NPN)
3	开关输出(PNP)
4	4~20mA模拟输出

Nil(空)	无(只限预设输入)
40	4点预置输入
52	16点预置输入(开关输出,NPN输出)
53	16点预置输入(开关输出, PNP输出)

Thread Type 螺纹种类

Nil(空)	Rc螺纹
G	G螺纹
N	NPT螺纹

Port Size 接管口径

1	1/8" (1000)型
2	1/4" (1000,2000,3000)型
3	3/8" (2000,3000)型
4	1/2" (3000)型

附件 Accessories

Nil(空)	无托架
B	水平托架
C	L型托架

Cable 电缆出线方式

Nil(空)	无电缆插头
S	直线型(3m)
L	直角型(3m)

Unit 压力指示单位

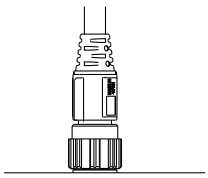
Nil(空)	MPa
2	kgf/cm²
3	bar
4	psi
5	kPa

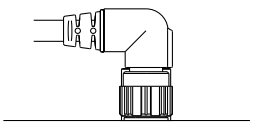
Please contract us on any small problem and details.
更详细的图以及问题, 请直接与本公司联络。

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

Product Features and Usage Examples(产品特性及用途示例)

- Infinite regulation of pressure(压力的无极调节)
- Remote pressure control function(远程控制压力功能)
- Pressure regulation system simplified, reduced components(调压系统简化, 元件减少)
- The response speed is fast(响应速度快).
- High precision(精度高)
- Power failure protection function(断电保护功能)
- Sensitivity: Remote pressure control function within 0.2% F.S.(灵敏度：0.2%F.S.之内远程控制压力功能)
- Linearity:Within ±1% F.S.(直线性,±1%F.S.之内)
- Hysteresis:Within 0.5% F.S.(迟滞,0.5%F.S.之内)
- No Lubricant Specifications (TITV1000 Series) (无润滑脂规格(TITV1000系列))
- Cables can be routed in two directions. (可2个方向引出电缆)


Direct type(直通型)


Right-angle type(直角型)

Unique Advantages(独特优点)

Wide Voltage Adaptability(宽电压适应)
The wider adaptation range of supply voltage is 10-28V.
(供电电压的更宽适应范围10-28V)

Multi-unit Selection(多单位易选)
Multiple pressure units available for user selection on the screen (psi, MPa, kPa,kgf/cm²,bar)
(多气压单位,用户屏上自选(psi,MPa, kPa,kgf/cm², bar))

Overvoltage Protection(过压有保护)
The power supply voltage overvoltage protection function (8V~28V)(供电电压过压保护功能(8V~28V))

Misconnection Protection(误接线防护)
Friendly on-site connection tolerance ensures that the product will not be damaged even if the power line is connected to the signal line.(友好的现场接线容忍，即使电源线接到信号线的时候也不会损坏产品)

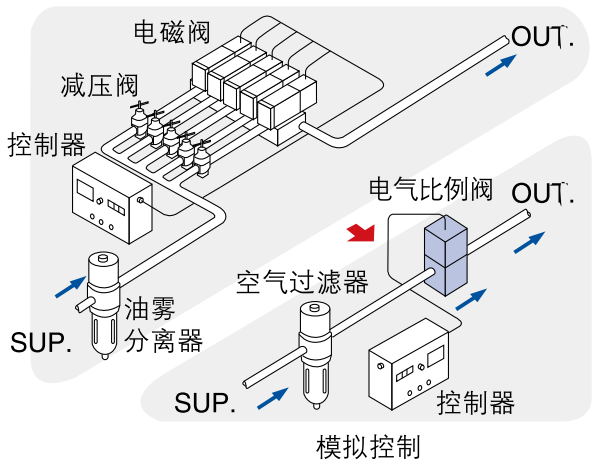
Output Soft Settings(输出软设置)
NPN/PNP selection can be configured on the screen.
(NPN/PNP选择可在屏上配置)

High-precision Temperature Compensation(高精度温补)
High-precision temperature drift compensation characteristics
(高精度的温度漂移补偿特性)

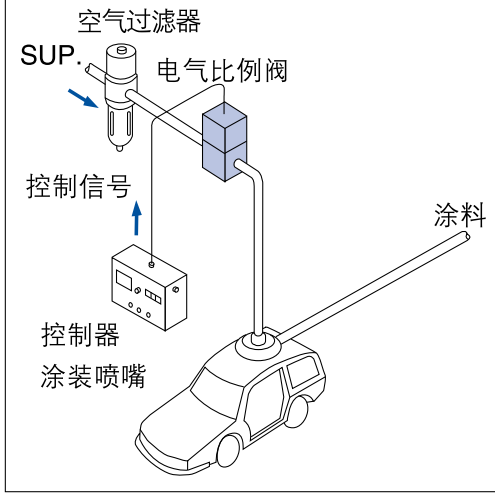
Smaller Temperature Drift(更小的温漂)
From the general temperature characteristic: improved from within ±0.12%F.S.°C to within ±0.05%F.S.°C.(由一般的温度特性：±0.12%F.S.°C之内提升到±0.05%F.S.°C之内)

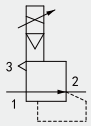
Unique Algorithm(独特的算法)
Through Self-learning AI algorithms, dynamically adjust the start and stop of control valves to reduce the number of adjustments and extend the service life of the control valves.(通过自学习AI算法，动态调整控制阀的启停，减少调整次数，延长控制阀的使用寿命)

Simulation control of multi-level control
(对多级控制进行模拟控制)



Electrostatic Coating Control
(静电涂装控制)



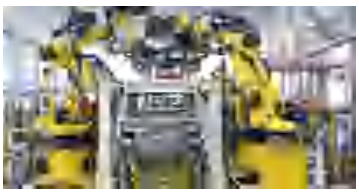
图形符号 

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

Application Areas(应用领域)


PCB Spraying Machine(PCB喷涂机)


Semiconductor Industry(半导体行业)


Mechanical Manufacturing(机械制造)


Laser Cutting(激光切割)


Automobile Manufacturing
(汽车制造)


Pharmaceutical Manufacturing
(医药制造)

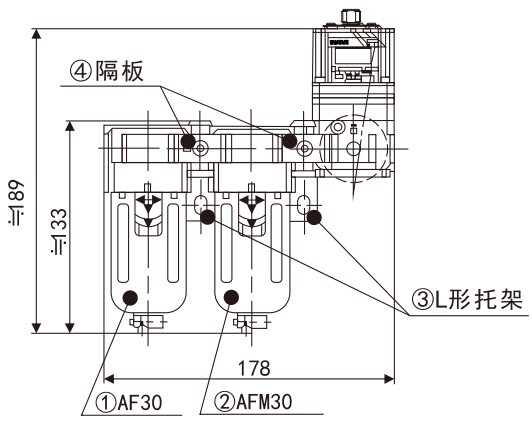

Printing and Packaging
(印刷包装)

Application Product and Accessories Combination Table(应用产品及附件组合表)

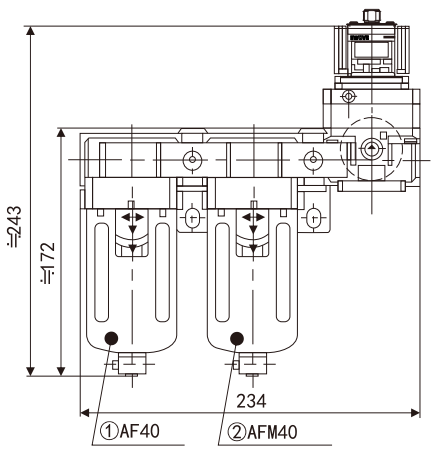
Application Products and Accessories Names (应用产品及附件名)	Applicable Models(适用型号)	
	TITV20 □□	TITV30 □□
① Air filter(空气过滤器)	AF30	AF40
② Oil mist separator(油雾分离器)	AFM30	AFM40
③ L-shaped bracket(L形托架)	B310L	B410L
④ Partition(隔板)	Y30	Y40
⑤ Partition with L-shaped bracket(带L形托架的隔板)(③+④)	Y30L	Y40L
⑥ Partition withT-shaped bracket(带T形托架的隔板)	–	Y40T

＊ TITV10□□的场合，请使用模块型适配器。

TITV20□□



TITV30□□



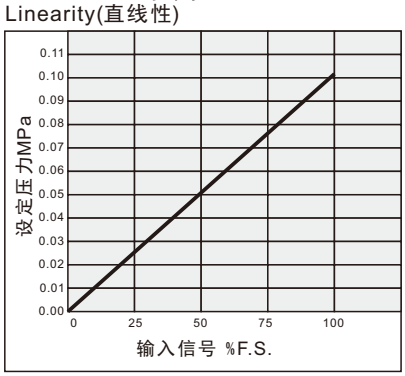
Please contract us on any small problem and details.
更详细的图以及问题，请直接与本公司联络。

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

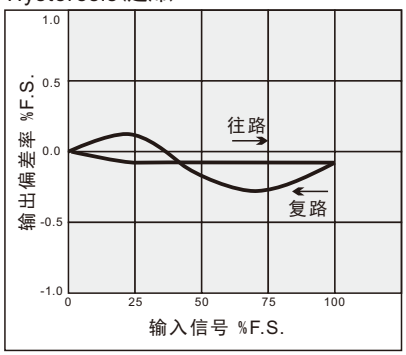
Product Feature Diagram(产品特性图)

TITV101□系列

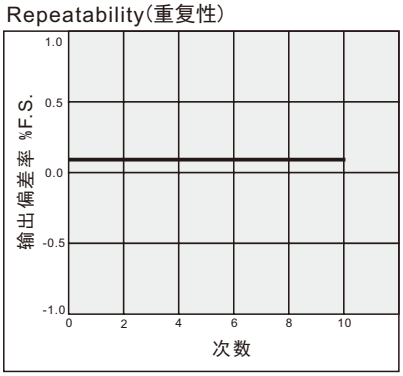
Linearity(直线性)



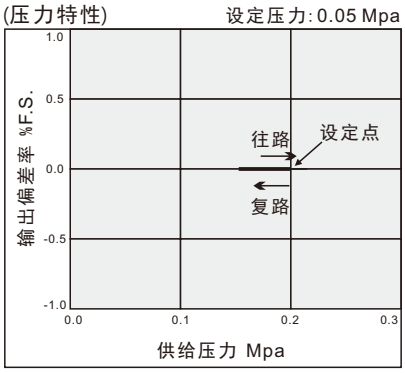
Hysteresis(迟滞)



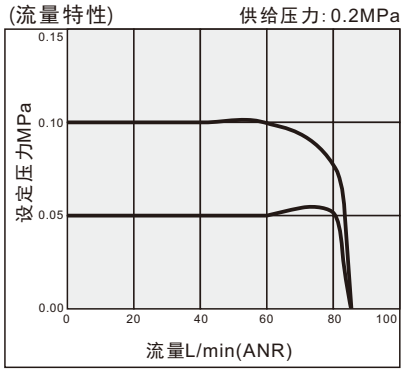
Repeatability(重复性)



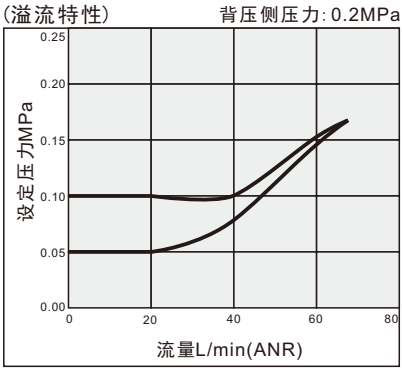
Stress Characteristics
(压力特性) 设定压力: 0.05 Mpa



Traffic Characteristics
(流量特性) 供给压力: 0.2MPa

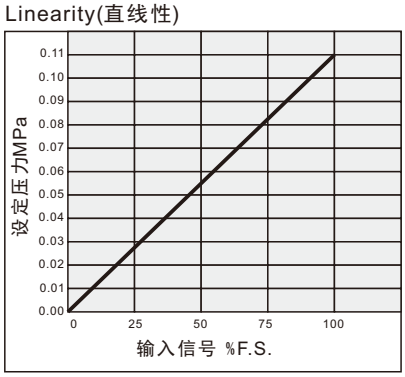


Overflow characteristics
(溢流特性) 背压侧压力: 0.2MPa

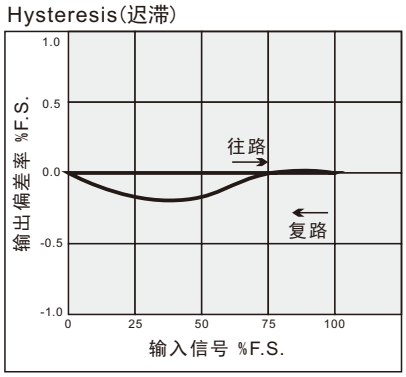


TITV201□系列

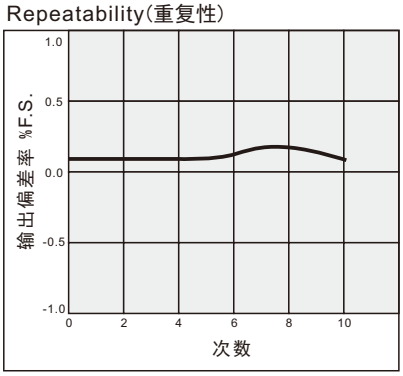
Linearity(直线性)



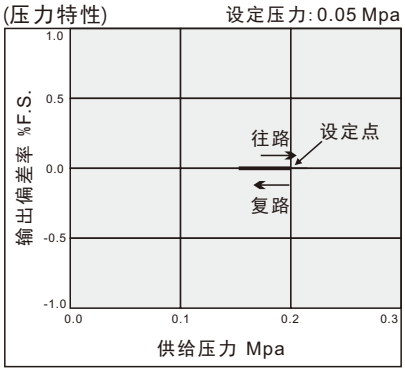
Hysteresis(迟滞)



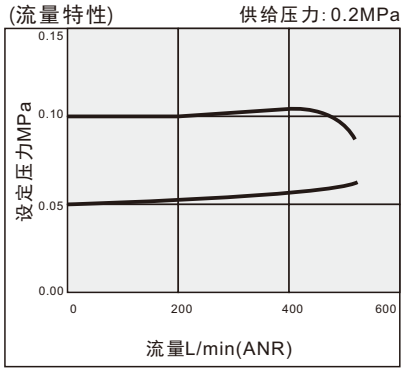
Repeatability(重复性)



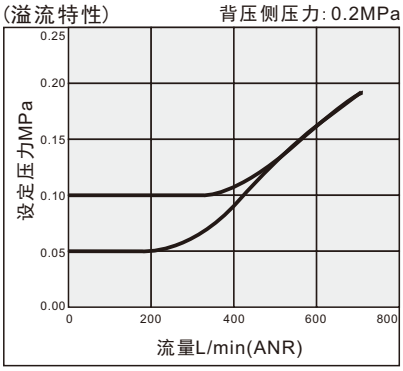
Stress Characteristics
(压力特性) 设定压力: 0.05 Mpa

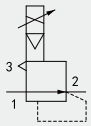


Traffic Characteristics
(流量特性) 供给压力: 0.2MPa



Overflow characteristics
(溢流特性) 背压侧压力: 0.2MPa



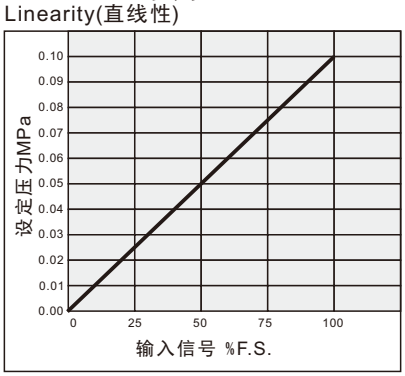
图形符号 

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

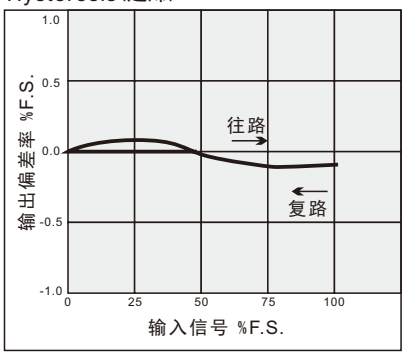
Product Feature Diagram(产品特性图)

TITV301□系列

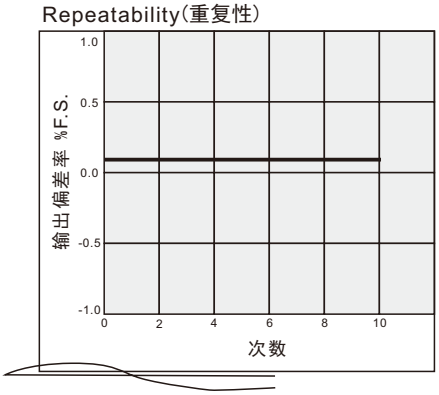
Linearity(直线性)



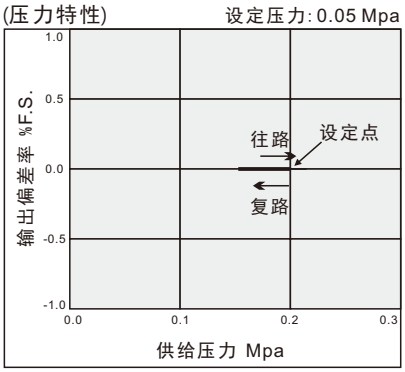
Hysteresis(迟滞)



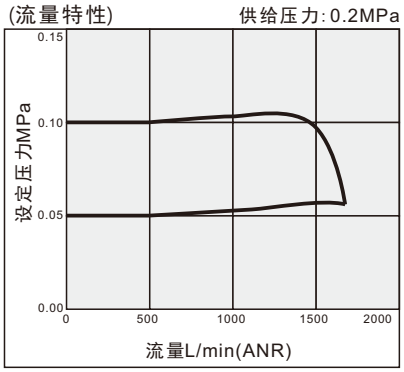
Repeatability(重复性)



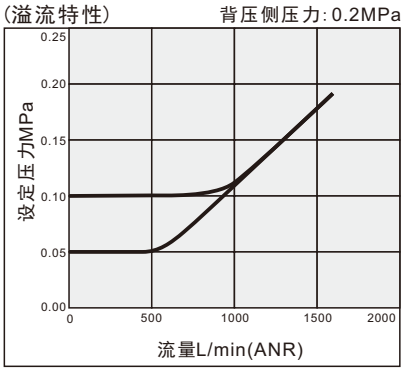
Stress Characteristics
(压力特性) 设定压力: 0.05 Mpa



Traffic Characteristics
(流量特性) 供给压力: 0.2MPa



Overflow characteristics
(溢流特性) 背压侧压力: 0.2MPa

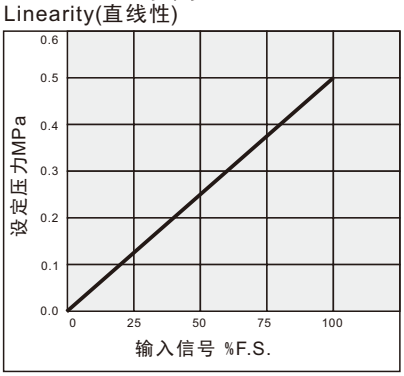


电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

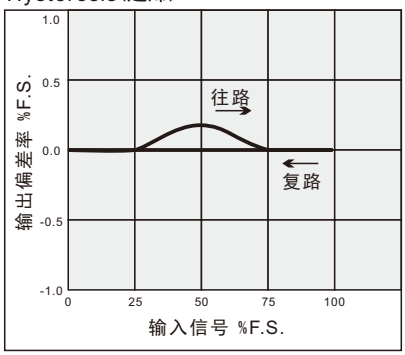
Product Feature Diagram(产品特性图)

TITV103□系列

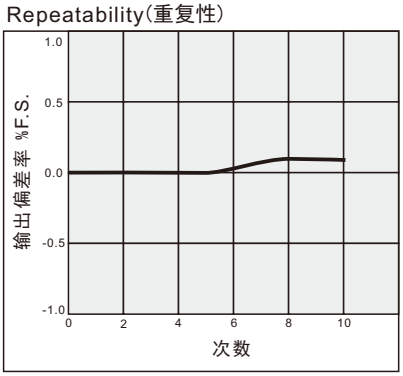
Linearity(直线性)



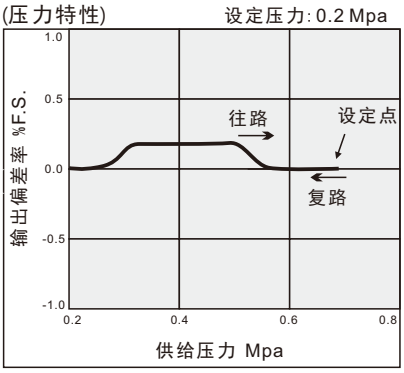
Hysteresis(迟滞)



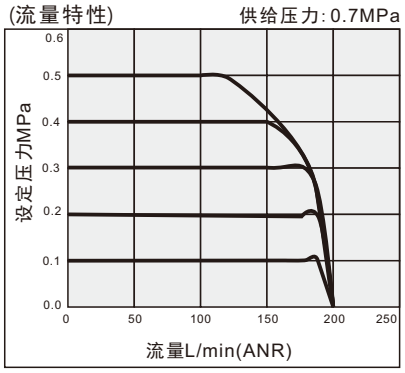
Repeatability(重复性)



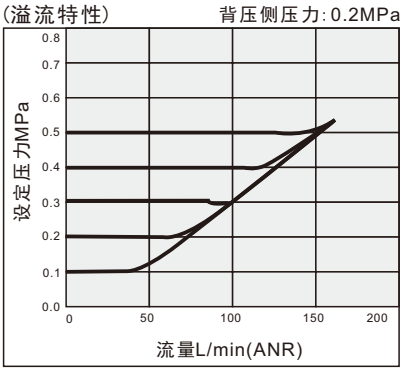
Stress Characteristics
(压力特性) 设定压力: 0.2 Mpa



Traffic Characteristics
(流量特性) 供给压力: 0.7MPa

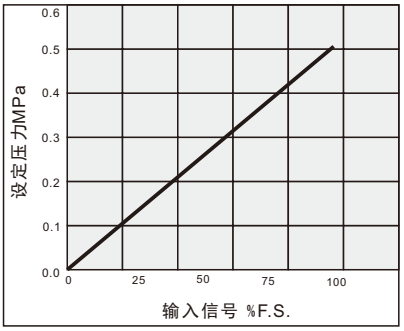


Overflow characteristics
(溢流特性) 背压侧压力: 0.2MPa

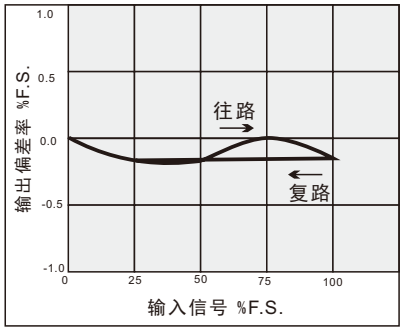


TITV203 系列

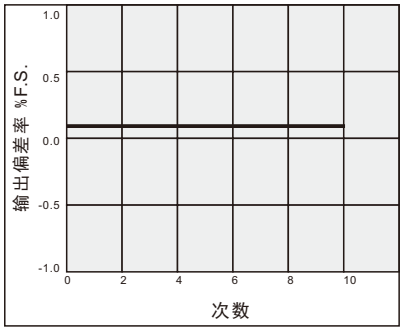
Linearity(直线性)



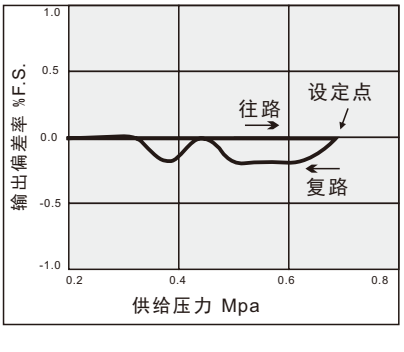
Hysteresis(迟滞)



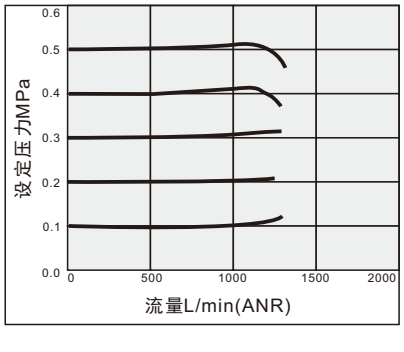
Repeatability(重复性)



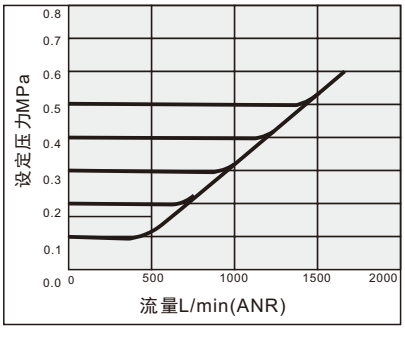
Stress Characteristics
(压力特性) 设定压力: 0.2 Mpa



Traffic Characteristics
(流量特性) 供给压力: 0.7MPa



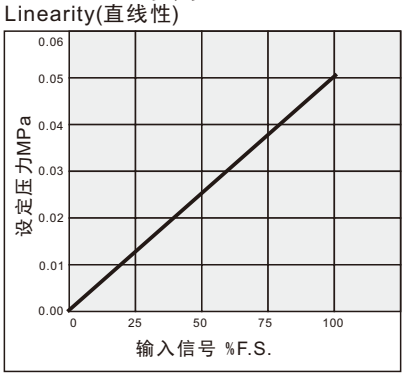
Overflow characteristics
(溢流特性) 背压侧压力: 0.7MPa



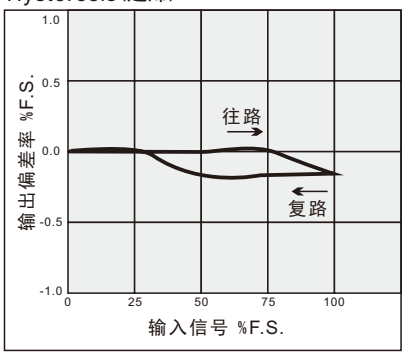
Product Feature Diagram(产品特性图)

TITV303□系列

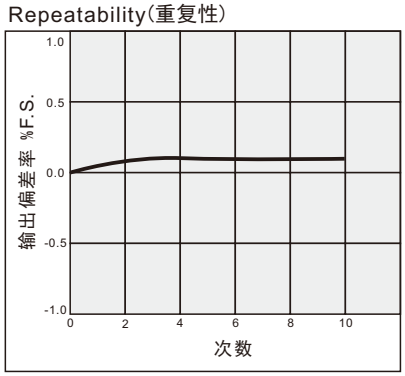
Linearity(直线性)



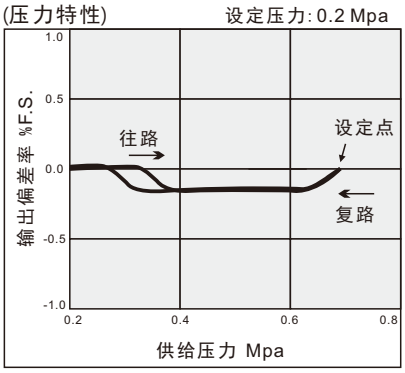
Hysteresis(迟滞)



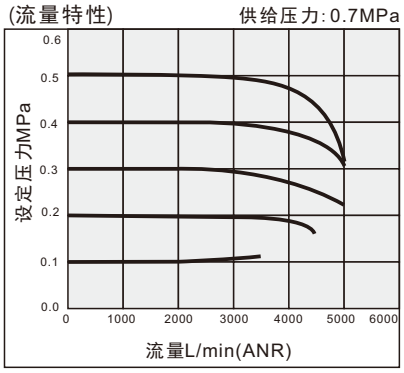
Repeatability(重复性)



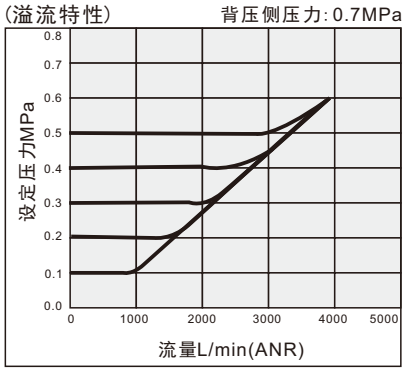
Stress Characteristics
(压力特性) 设定压力: 0.2 Mpa



Traffic Characteristics
(流量特性) 供给压力: 0.7MPa



Overflow characteristics
(溢流特性) 背压侧压力: 0.7MPa



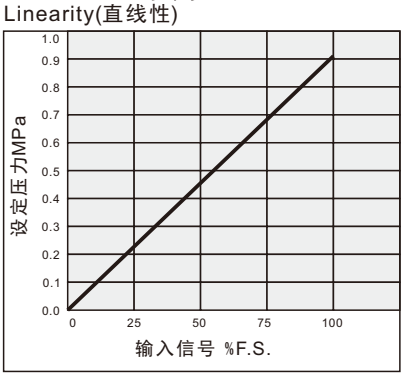
Please contract us on any small problem and details.
更详细的图以及问题，请直接与本公司联络。

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

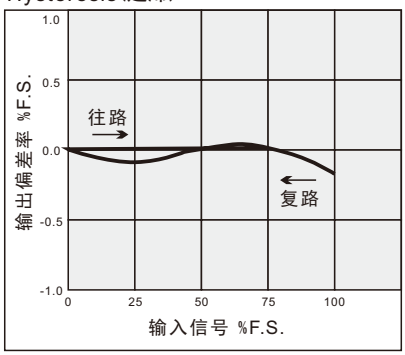
Product Feature Diagram(产品特性图)

TITV105□系列

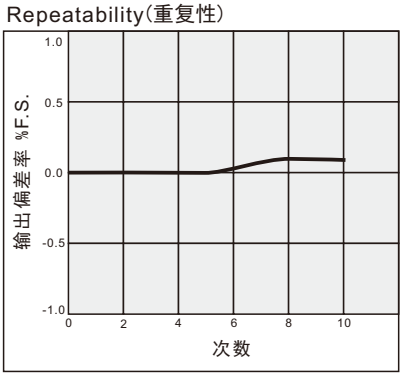
Linearity(直线性)



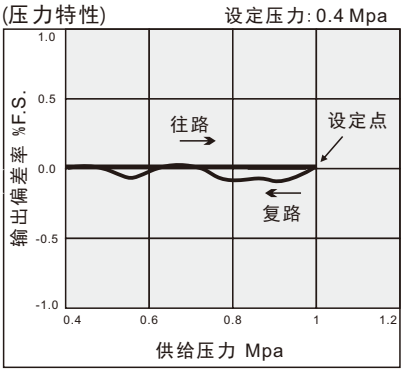
Hysteresis(迟滞)



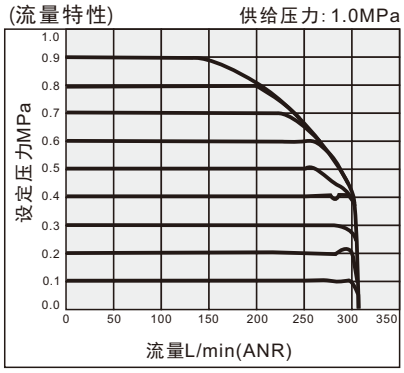
Repeatability(重复性)



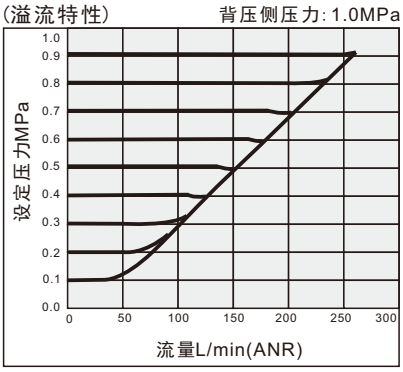
Stress Characteristics
(压力特性) 设定压力: 0.4 Mpa



Traffic Characteristics
(流量特性) 供给压力: 1.0MPa

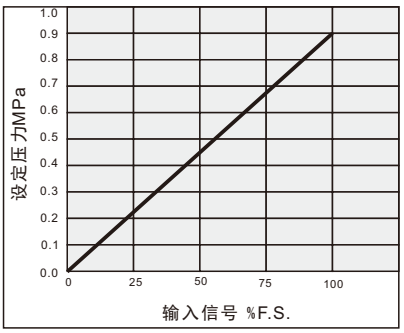


Overflow characteristics
(溢流特性) 背压侧压力: 1.0MPa

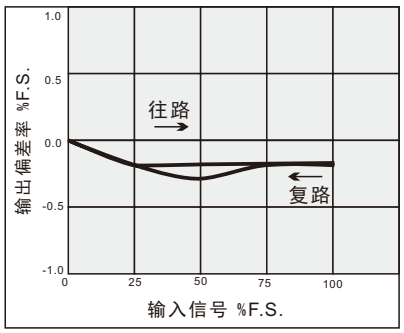


TITV205 系列

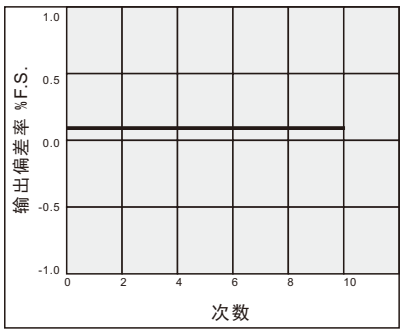
Linearity(直线性)



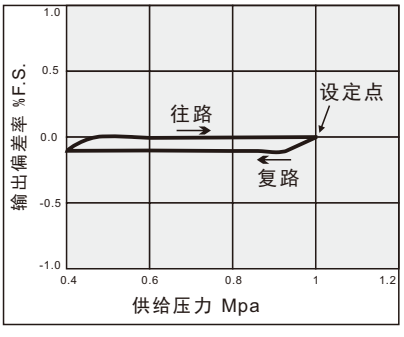
Hysteresis(迟滞)



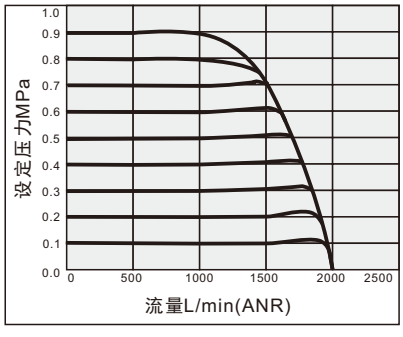
Repeatability(重复性)



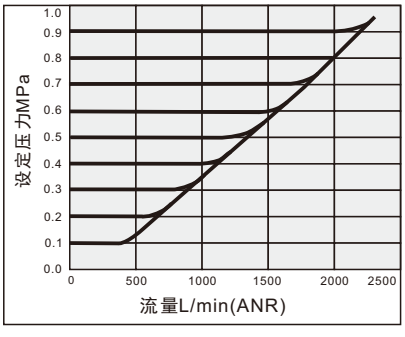
Stress Characteristics
(压力特性) 设定压力: 0.4 Mpa



Traffic Characteristics
(流量特性) 供给压力: 1.0MPa



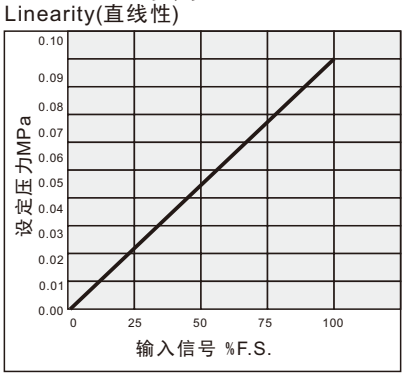
Overflow characteristics
(溢流特性) 背压侧压力: 1.0MPa



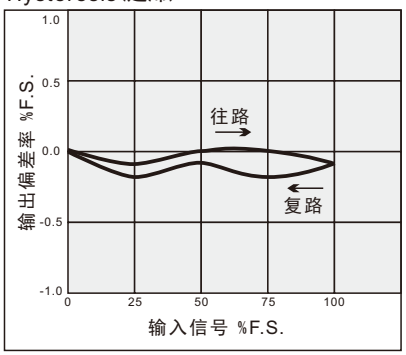
Product Feature Diagram(产品特性图)

TITV305□系列

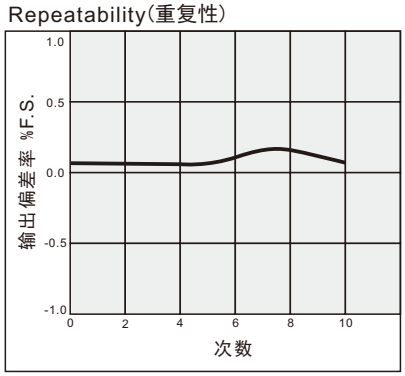
Linearity(直线性)



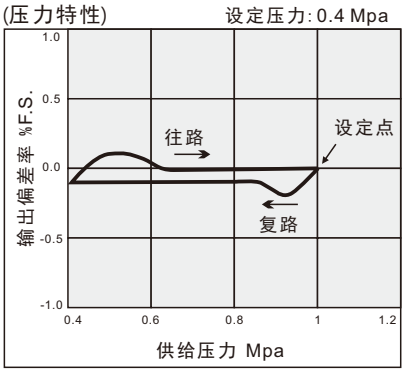
Hysteresis(迟滞)



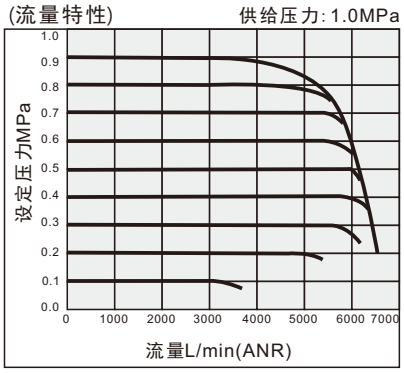
Repeatability(重复性)



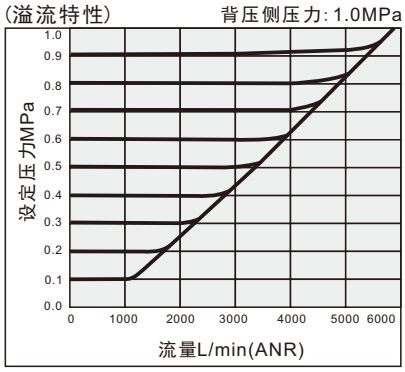
Stress Characteristics
(压力特性) 设定压力: 0.4 Mpa



Traffic Characteristics
(流量特性) 供给压力: 1.0MPa



Overflow characteristics
(溢流特性) 背压侧压力: 1.0MPa

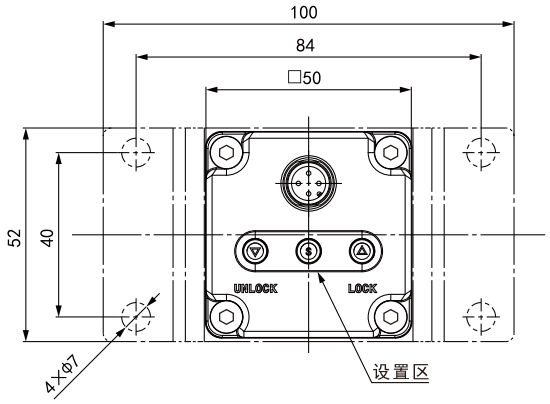


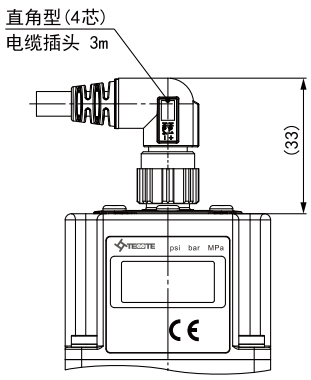
Please contract us on any small problem and details.
更详细的图以及问题，请直接与本公司联络。

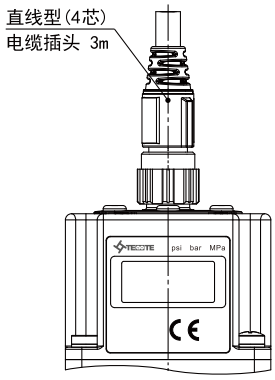
电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

Appearance and Dimensions(外型及尺寸)

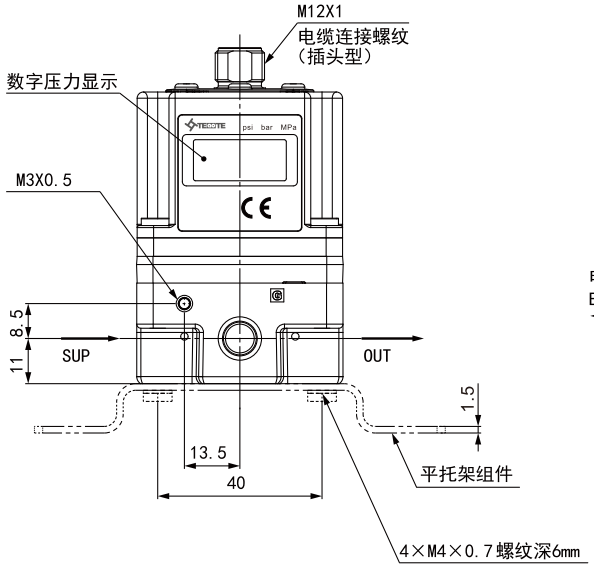
TITV10□□　平托架

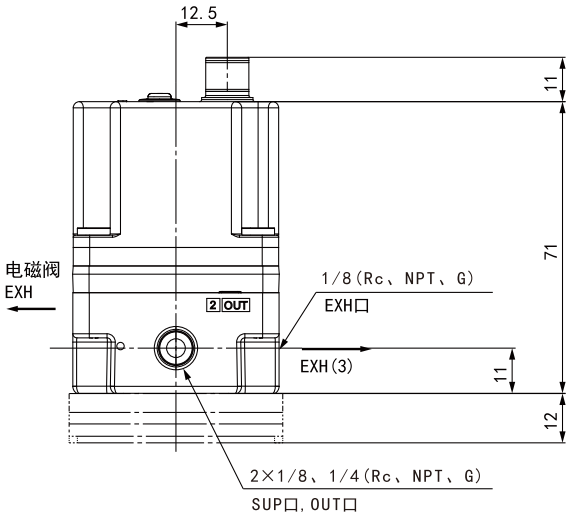




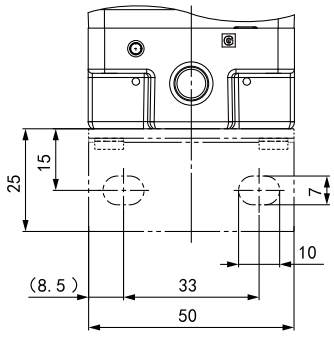


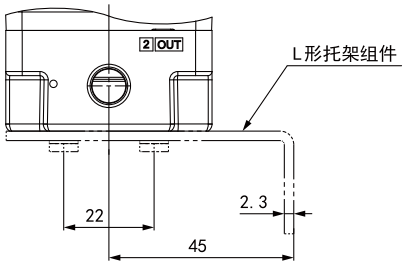
注) 电缆插头本身不可旋转，切勿转动。





L形托架

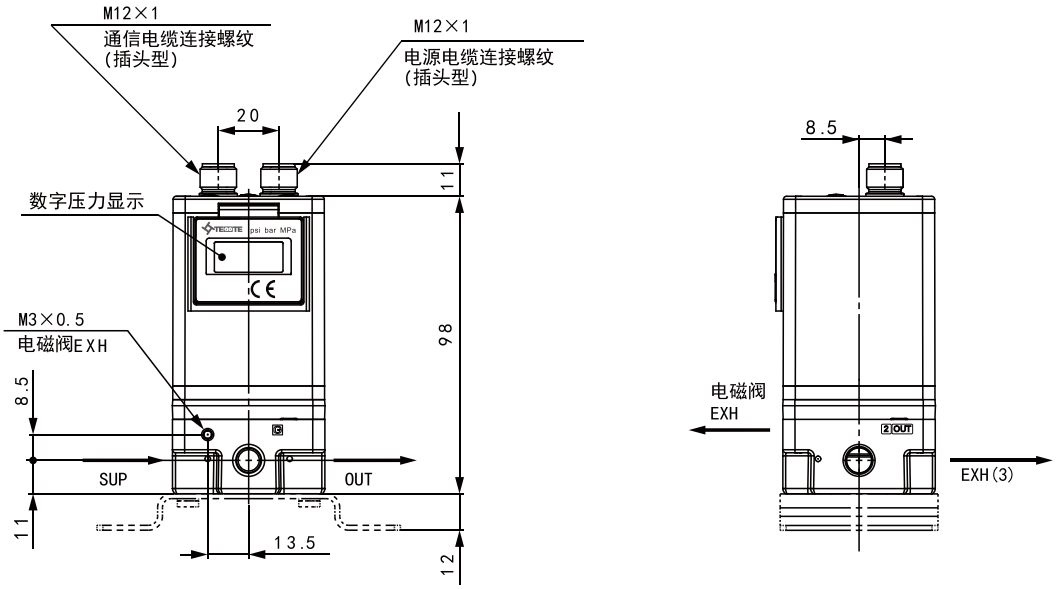




Appearance and Dimensions(外型及尺寸)

TITV10□□

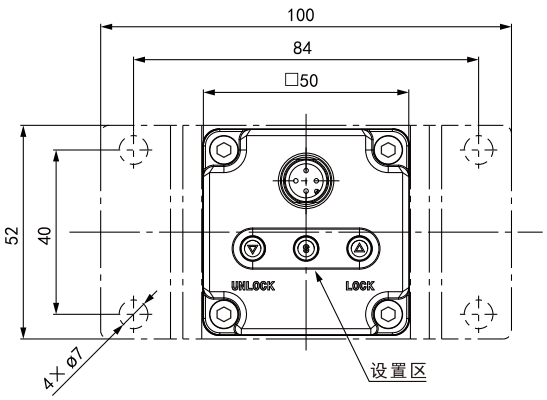
16点预置输入

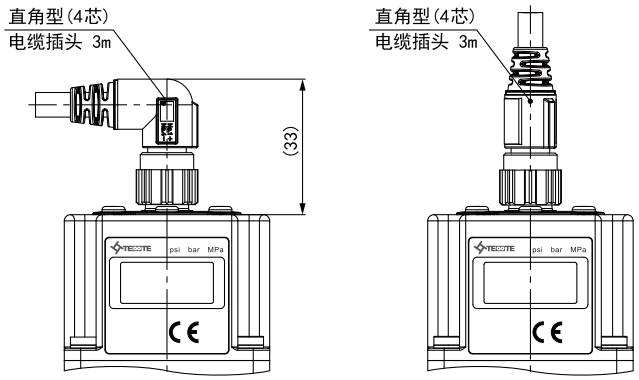


电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

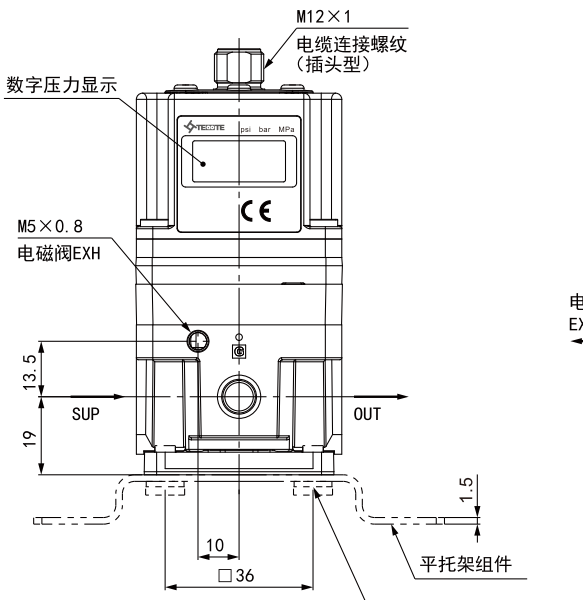
Appearance and Dimensions(外型及尺寸)

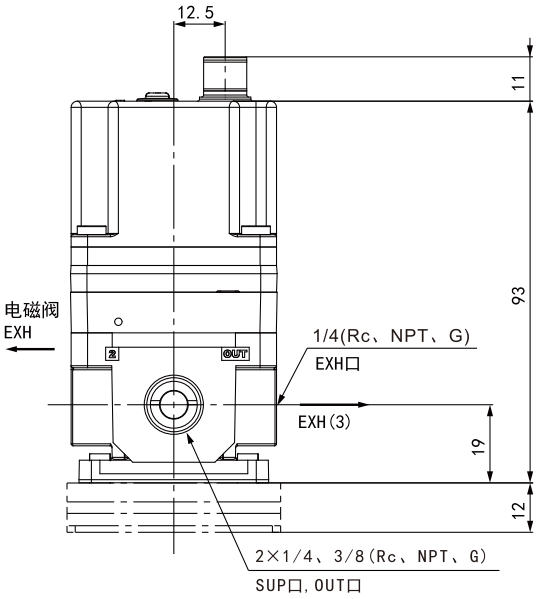
TITV20□□　　平托架



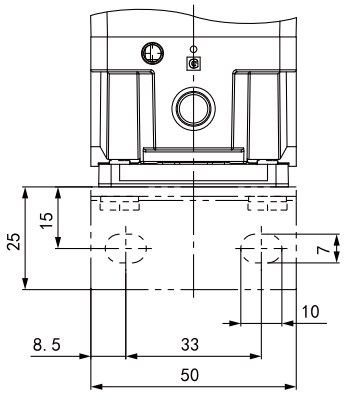


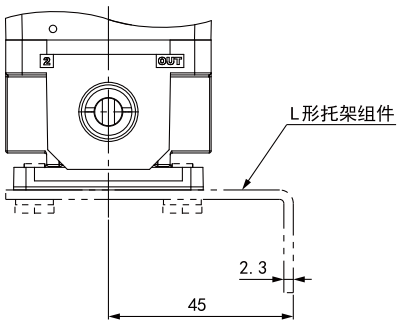
注) 电缆插头本身不可旋转，切勿转动





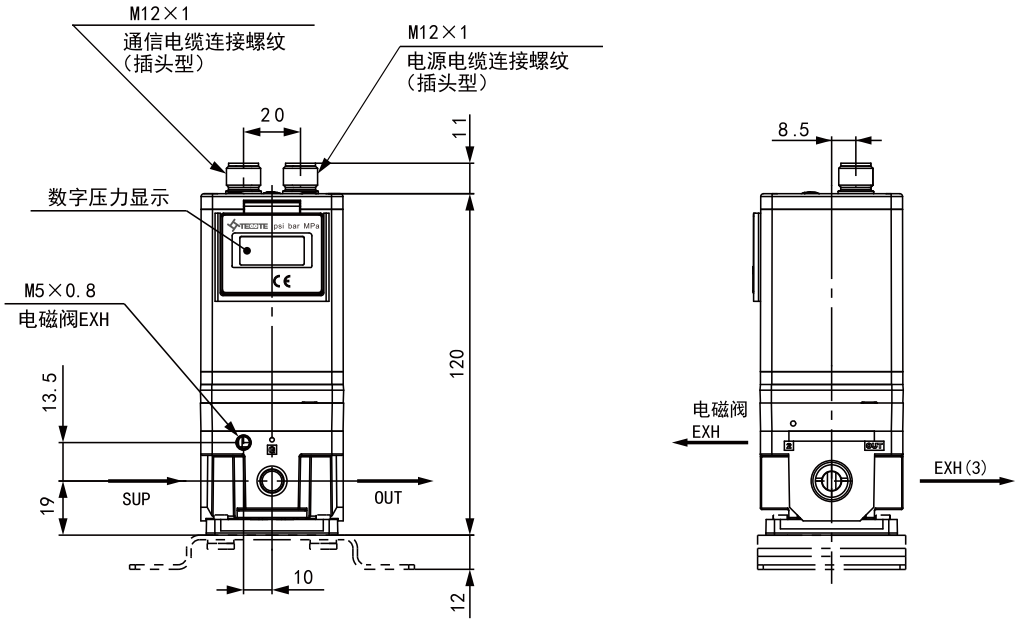
L形托架





Appearance and Dimensions(外型及尺寸)

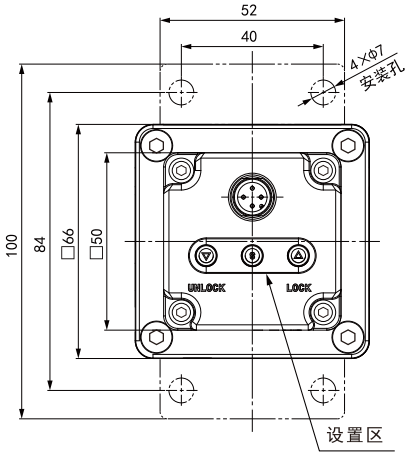
TITV20□□　16点预置输入

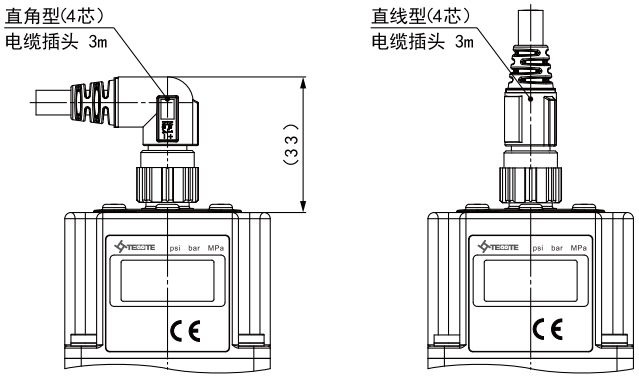


电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

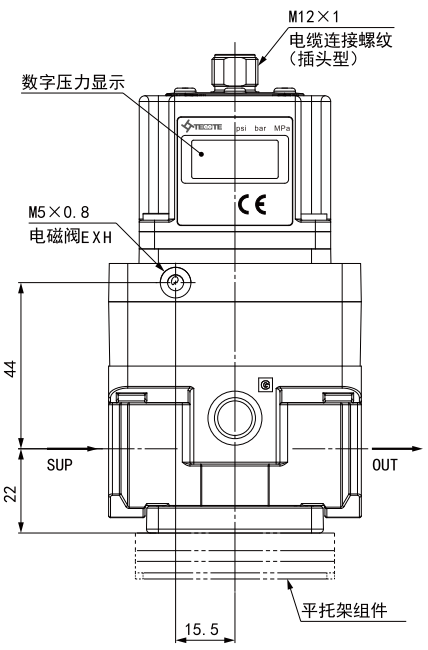
Appearance and Dimensions(外型及尺寸)

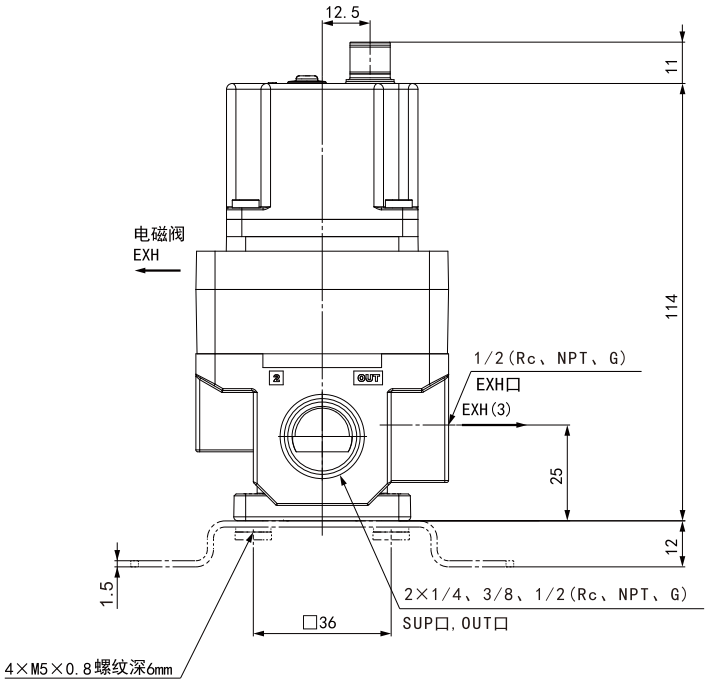
TITV30□□　平托架



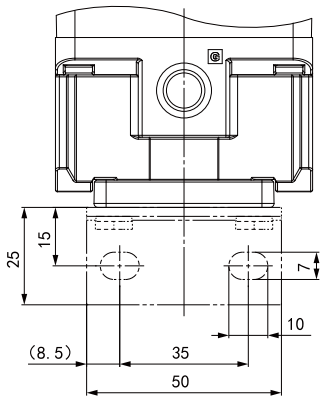


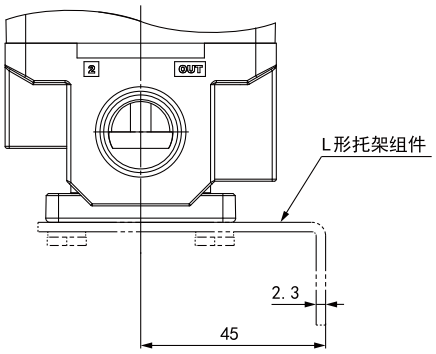
注：电缆插头本身不可旋转，切勿转动





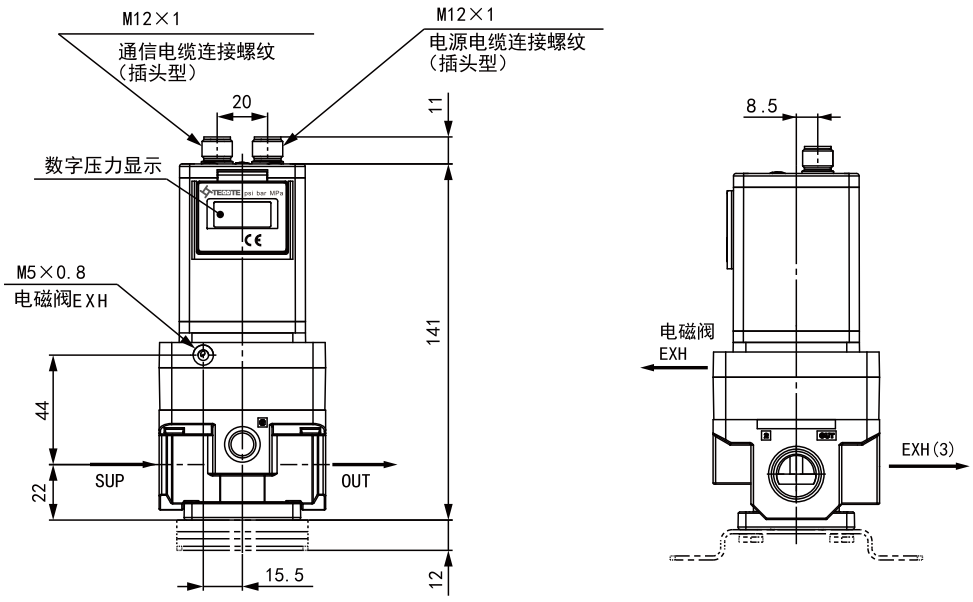
L形托架





Appearance and Dimensions(外型及尺寸)

TITV30 □□　　16点预置输入



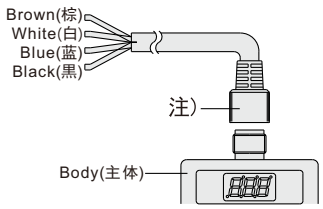
电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

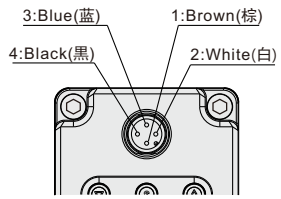
Distribution and Signal(配信和信号)

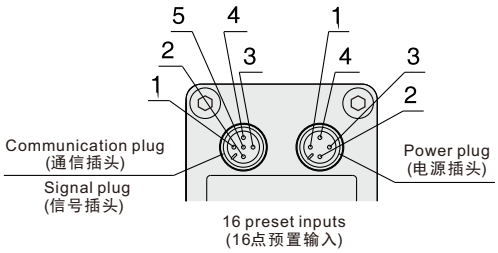
Wiring Method(配线方法)

Attention(注意)

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.(电缆插头连接在本产品的插座上时请按如下配线。若配线错误，可能会造成产品损坏，请多加注意。另外，请使用容量充足且波动小的Dc电源).







Current signal type(电流信号型)

Voltage Signal Type(电压信号型)

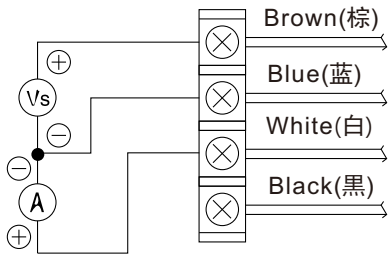
1	Brown(棕)	Supply power(供给电源)
2	White(白)	Input Signal(输入信号)
3	Blue(蓝)	GND(COMMON)
4	Black(黑)	Monitoring output(监视输出)

Preset input type(预置输入型)

1	Brown(棕)	Supply power(供给电源)
2	White(白)	Input Signal 1(输入信号1)
3	Blue(蓝)	GND(COMMON)
4	Black(黑)	Input Signal 2(输入信号2)

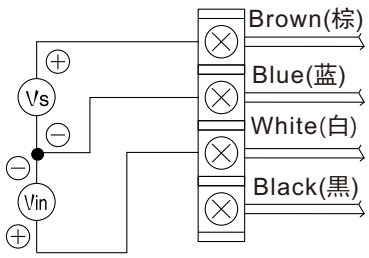
Input Signal Wiring Diagram(输入信号配线图)

Current signal type(电流信号型)



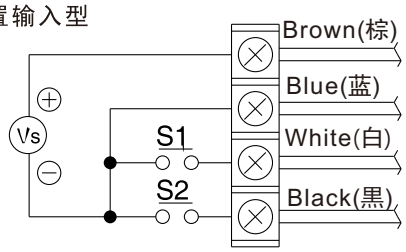
Vs：供给电源 DC24V
DC12~15V
A：输入信号 DC4~20mA
DC0~20mA

Voltage Signal Type(电压信号型)



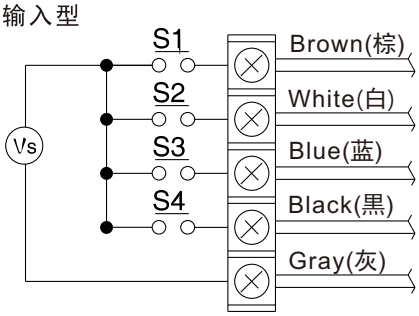
Vs：供给电源 DC24V
DC12~15V
Vin：输入信号 DC0~5V
DC0~10V

4点预置输入型



Vs：供给电源 DC24V
DC12~15V
(-COM)

16点预置输入型



Vs：供给电源DC24V(无极性)

Distribution and Signal(配信和信号)

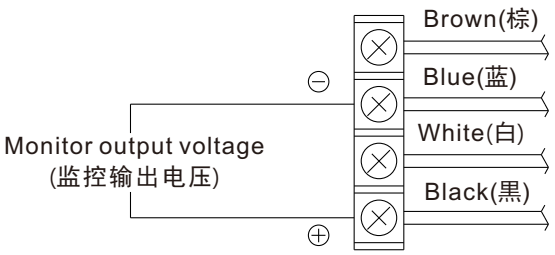
根据S1、S2的ON、OFF组合，选择预置压力P1~P4其中的一个。

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(预置压力)	P01	P02	P03	P04	P05		P14	P15	P16

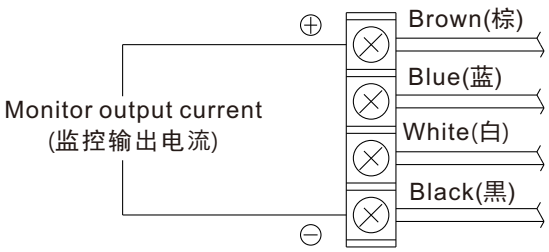
*另外，处于安全方面的考虑，预置压力的1个推荐设定压力为0MPa。

Monitoring Output Wiring Diagram(监控输出配线图)

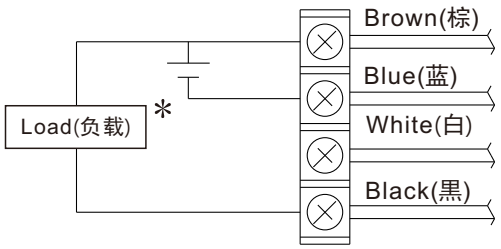
Simulation output voltage type
(模拟输出电压型)



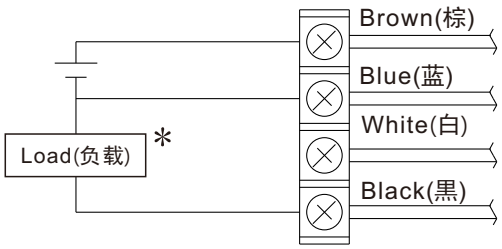
Current output simulation (source type)
(模拟输出电流型(汇式))



Switch Output NPN Type
(开关输出NPN型)



Switch Output PNP Type
(开关输出PNP型)



* If a current of more than DC 80mA flows, the overcurrent detection function will trigger an error alarm. (Error code "5")
(如流过DC80mA以上的电流，过电流检测功能启动错误报警。(错误序号 "5"))

Set pressure range(设定压力范围)

Unit(单位)	Set pressure range(设定压力范围)		
	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

Please contract us on any small problem and details.
更详细的图以及问题，请直接与本公司联络。

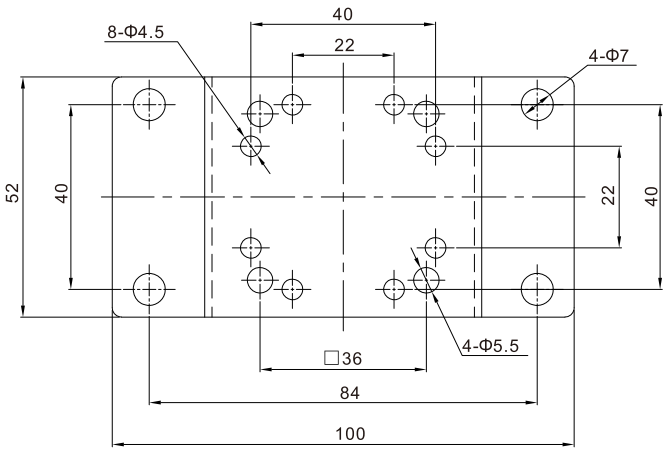
电–气比例阀
Electro-Pneumatic Regulator
TITV1000 · 2000 · 3000 Series

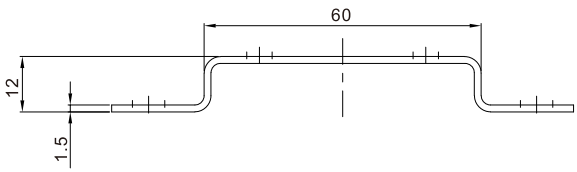
Accessories(配件)

Bracket(托架)

Name(名称)	订购码	重量
Pinto Bracket Assembly (with Mounting Screws) 平托架组件(带安装螺钉)	F-TITV-B	75g
L-shaped bracket assembly (with mounting screws)L形托架组件(带安装螺钉)	F-TITV-C	85g

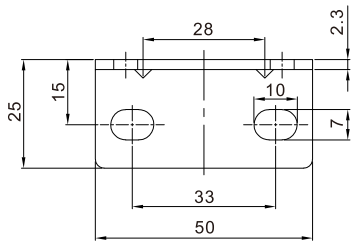
Pinto Bracket(平托架)

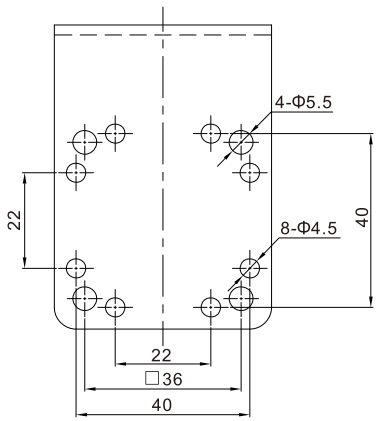


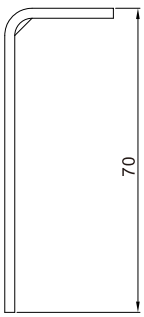


Model(型号)	Bracket Fastening Torque(托架紧固力矩)
TITV1000	0.76±0.05N·m
TITV2000/3000	1.5±0.05N·m

L-shaped Bracket(L形托架)





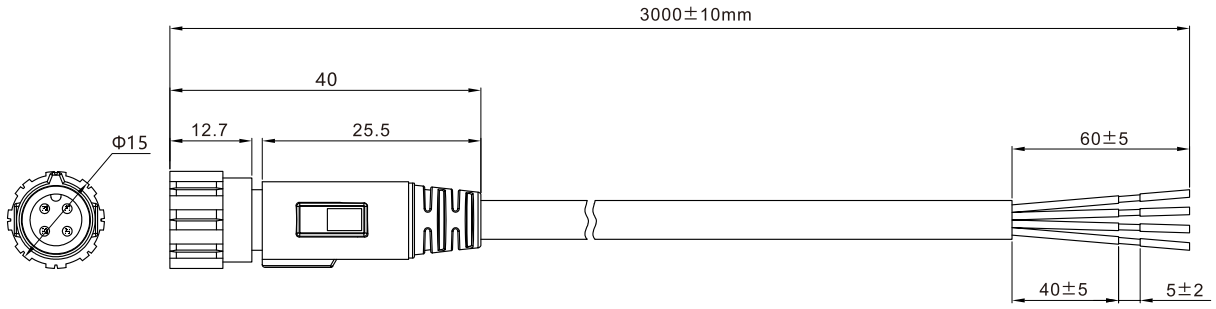


Accessories(配件)

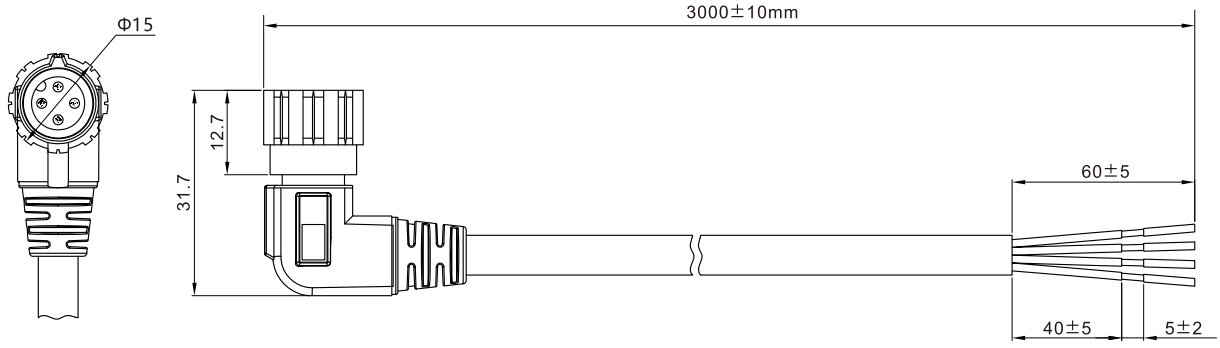
Cable plug(电缆插头)

Corresponding model (对应型号)	Name(名称)		Order Code(订购码)	Weight(重量)
电流型 电压型 4点预置输入	电缆插头(4芯)	直线型3m	F-TITV-S	170g
		直角型3m	F-TITV-L	
16点预置输入	电源插头(4芯)	直线型3m	F-TITV-S	170g
		直角型3m	F-TITV-L	

Direct type(直通型)



Right-angle type(直角型)



⚠ 注意事项

1、供气压力需经过空气过滤器。过滤精度5μm以下；
2、安装接头管路时，应防止螺纹杂屑及密封材料进入管道，堵塞小阀进气口；
3、带有冷凝水的压缩空气进入产品可能导致作动不良，请做相应的气路干燥；
4、产品在加压阶段突然断电，“OUT”输出测为断电保护状态，有压力短暂一直保持；
5、本产品出厂时，均已做好各项指数检测，严禁自行拆装，可能会导致产品不稳定；
6、四芯电缆线装配仅一个方向，装配完毕后，严禁旋转，如强行旋转，会造成接头连接部破损；
7、产品通气通电顺序：通电→通气→断气→断电；
8、有强电场场合使用本产品，配线应尽量远离，避免受到外部干扰影响产品使用；
9、产品使用可能会产生电磁阀工作的声音，但不影响参数设定与产品使用；
10、四芯电缆线在不使用监控输出时，应避免与其他电缆线接触、可能导致误动作。

Please contract us on any small problem and details.
更详细的图以及问题，请直接与本公司联络。