

TS600L *Linear Type*



TS600R *Rotary Type*



Electro-Pneumatic Positioner TS600 Series Best Control Valve System

- Simple zero and span adjustment
- Easy 1/2 split range setting
- Auto / Manual switch
- IP66 Weather proof
- Explosion Proof Type : Ex dmb IIB T5/T6, Ex dmb IIC T5/T6, Ex ia IIC T5/T6



Electro-Pneumatic Positioner TS600 Series

Introduction

Tissin is a professional brand of control valve accessories. We are trying to provide excellent quality of product through long-term field experience and manufacturing background of experience.

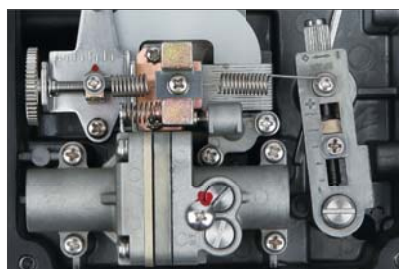
TS600 is state-of-the-art electro-pneumatic positioner. It is designed for user-friendly and built-in type for convenience features and durability.

Product Description

TS600 electro-pneumatic positioner control valve stroke in response to input signal of 4-20mA from control panel, DCS, or calibrator.

Product Features

- Applied to various control valve system.
- Fast response time, durability, and excellent stability.
- Simple zero and span adjustment.
- IP 66 enclosure.
- Easy maintenance due to built-in module type.
- Strong to vibrations and No resonance between 5 - 200 Hz.
- By-pass valve (A/M switch) installed.
- Air connection part is designed for detachability and it can be changed PT/NPT tapping threads in the field easily.



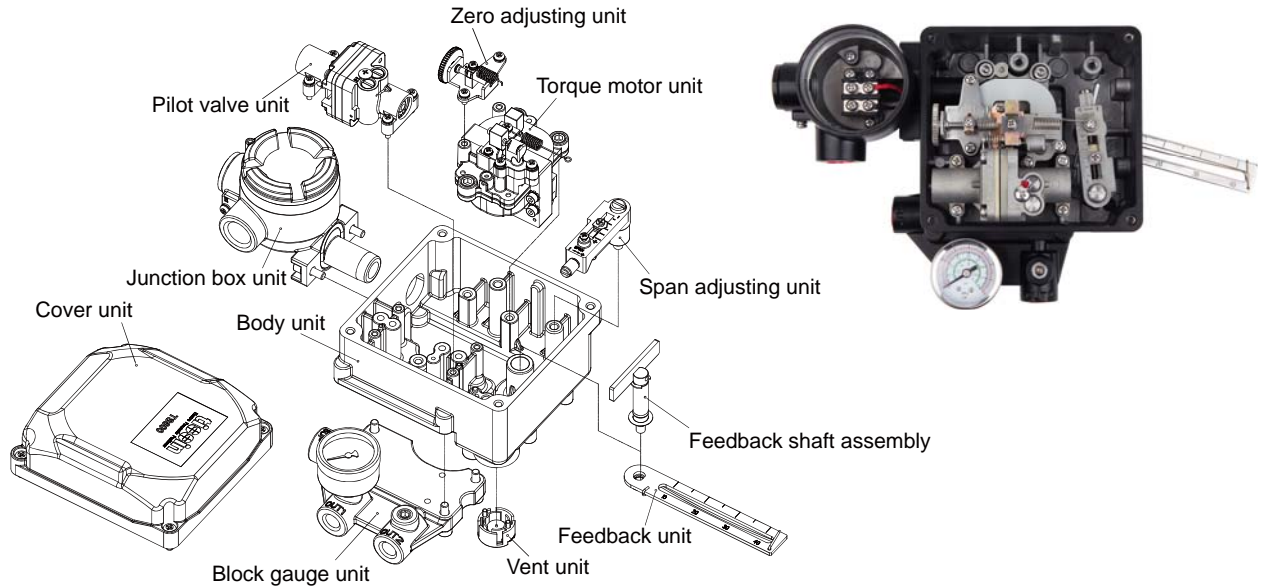
Product Specification

Item.Type	TS600L		TS600R	
	Single	Double	Single	Double
Input Signal	4~20mA DC			
Impedance	250 ±15Ω			
Supply Pressure	0.14~0.7MPa			
Stroke	10~150mm		0~90°	
Air Connection	PT(NPT)1/4			
Gauge Connection	PT(NPT)1/8			
Conduit	G(PF)1/2 or NPT1/2			
Explosion Proof	Non-Explosion Ex dmb IIB T5/T6 Ex dmb IIC T5/T6 Ex ia IIC T5/T6			
Enclosure	IP66			
Ambient Temp.	Operating Temp.	-30℃~70℃ (Standard) -40℃~70℃ (Low Temp), -30℃~120℃ (High Temp)		
	Explosion Temp.	-40~60℃ (T5) / -40~40℃ (T6)		
Linearity	±1.0% F.S	±2.0% F.S	±1.0% F.S	±2.0% F.S
Sensitivity	±0.2% F.S	±0.5% F.S	±0.2% F.S	±0.5% F.S
Hysteresis	±1.0% F.S			
Repeatability	±0.5% F.S			
Air Consumption	Blow 2.5LPM (Sup=0.14MPa)			
Flow Capacity	Over 80LPM (Sup=0.14MPa)			
Material	Aluminum Diecasting			
Weight	2.8kg			

- Tested under ambient temperature of 20℃, absolute pressure of 760mmHg, and humidity of 65%.
- Please contact Tissin Co.,Ltd. for detailed testing specification.



Parts and Assembly



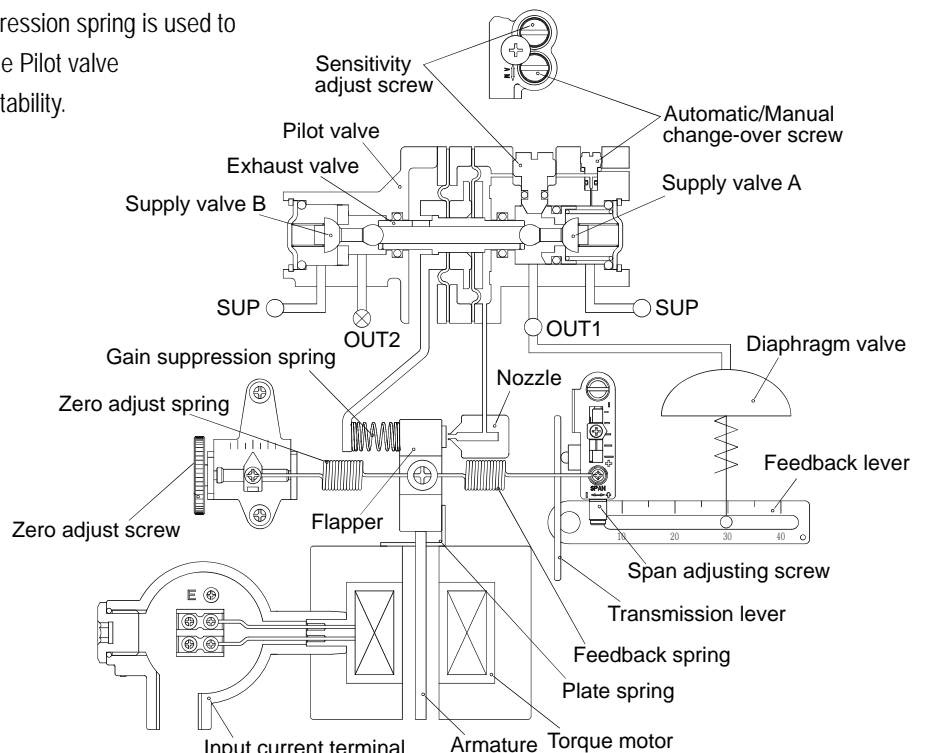
Operation Logic

When the input current (4-20mA) increases, Armature receives counter-clockwise rotating torque as a magnetic field strength of Torque motor and Flapper moves to left as the center of Plate Spring. When the space between Flapper and Nozzle opens, the Nozzle back pressure* decreases. As a result, Exhaust valve of Pilot valve moves to right. At the same time, Supply valve A of OUT1 moves to right and opens Supply valve. Air supply through OUT1 increases air pressure of diaphragm and diaphragm valve moves downward. The movement of diaphragm valves acts on Feedback spring through Feedback lever and Flapper increases torque to the left pull. The diaphragm valve is balanced at the position between the above spring torque and magnetic field strength generated by the input current. Gain suppression spring is used to immediately feedback the movement of the Pilot valve to the Flapper and it increases the loop* stability.

* The above are explained by based on TS600L linear type and Diaphragm valve of RA(Reverse Action) type. TS600R rotary type is same as Operation logic of TS600L linear type except feedback structure.

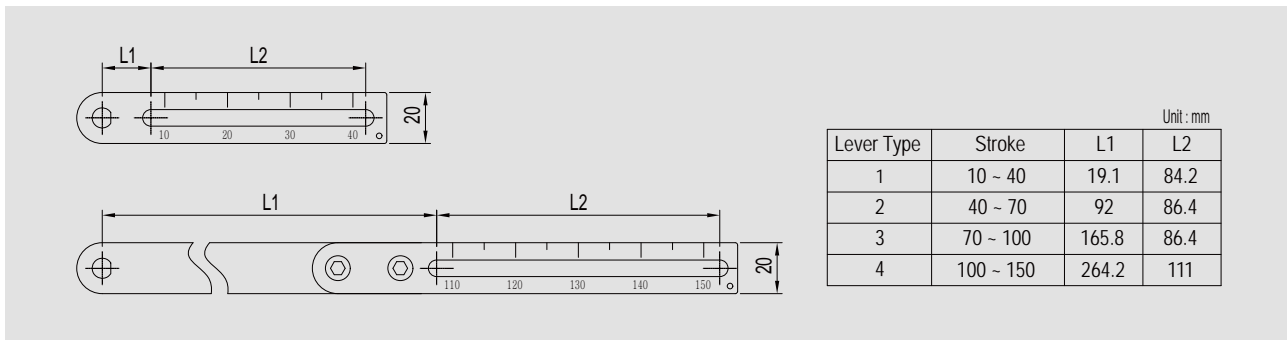
* Nozzle back pressure
Internal pressure of Nozzle depending on the control the Nozzle by the Flapper.

* Loop
Positioner and Control valve consist of closed-circuit through Feedback lever.

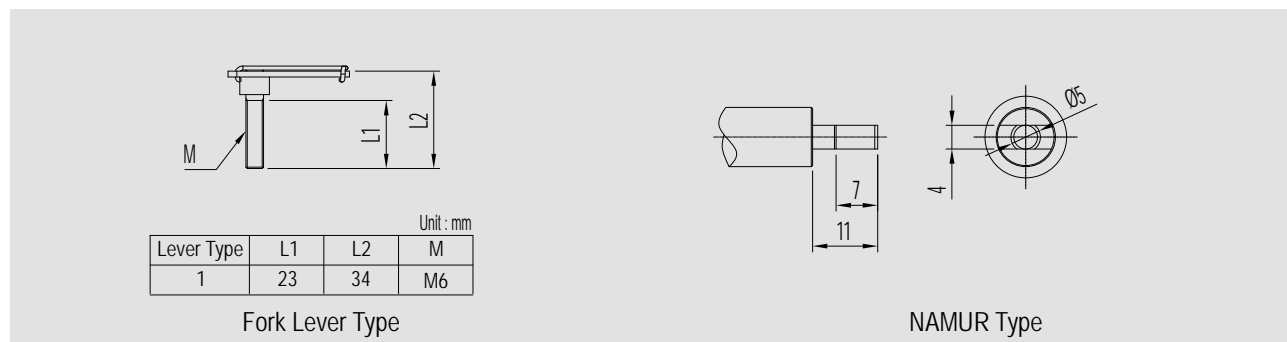


Lever & Bracket

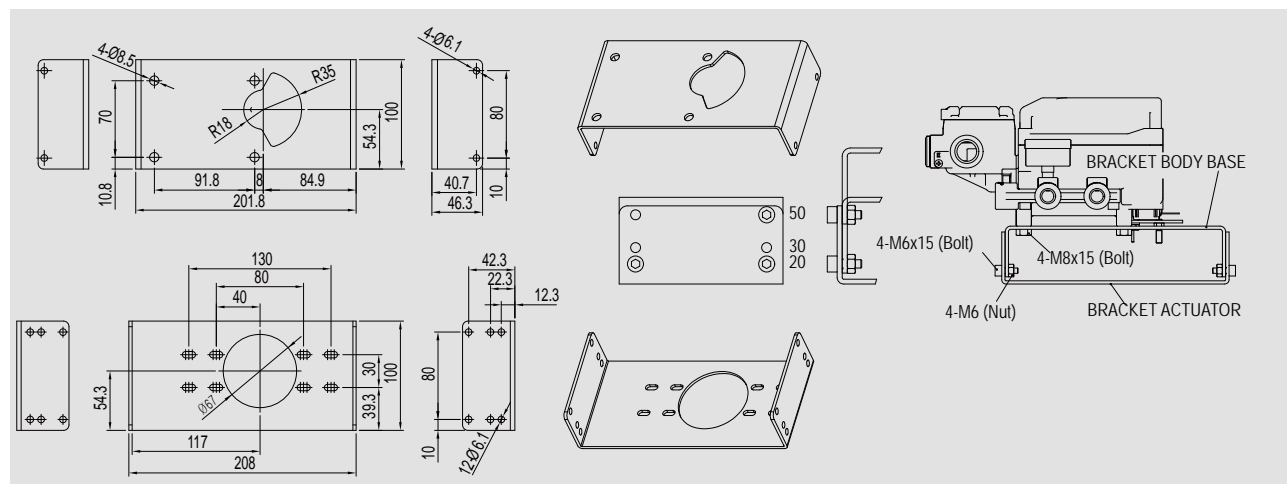
TS600L Lever Dimension



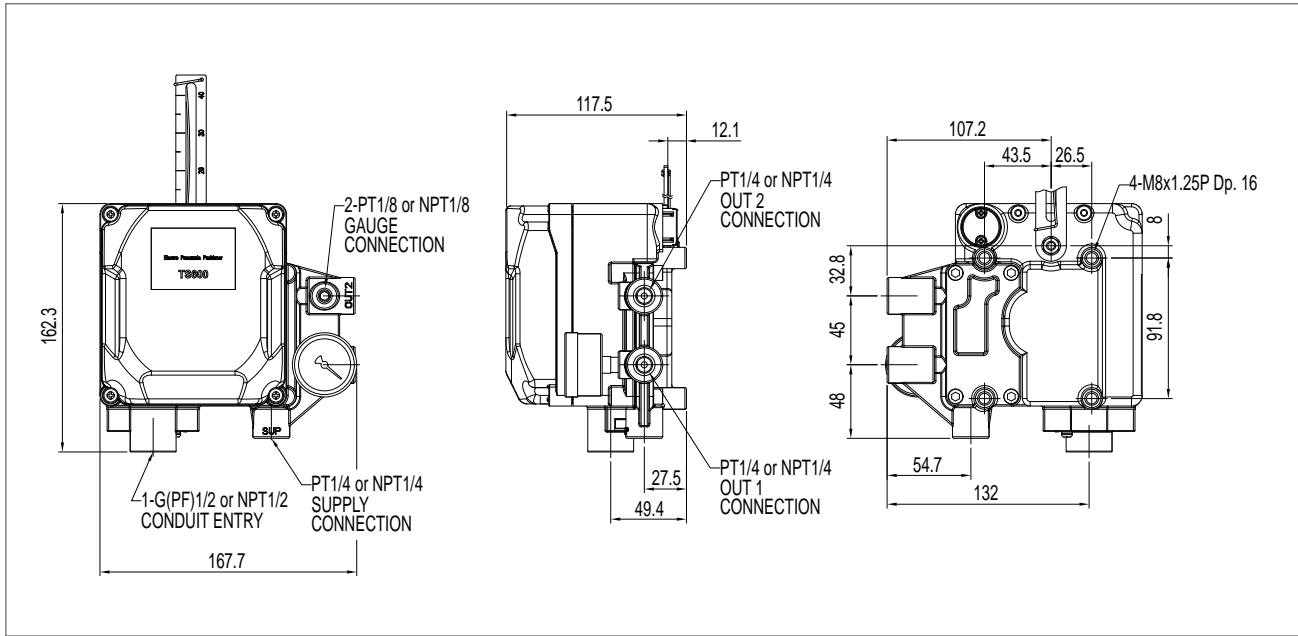
TS600R Lever Dimension



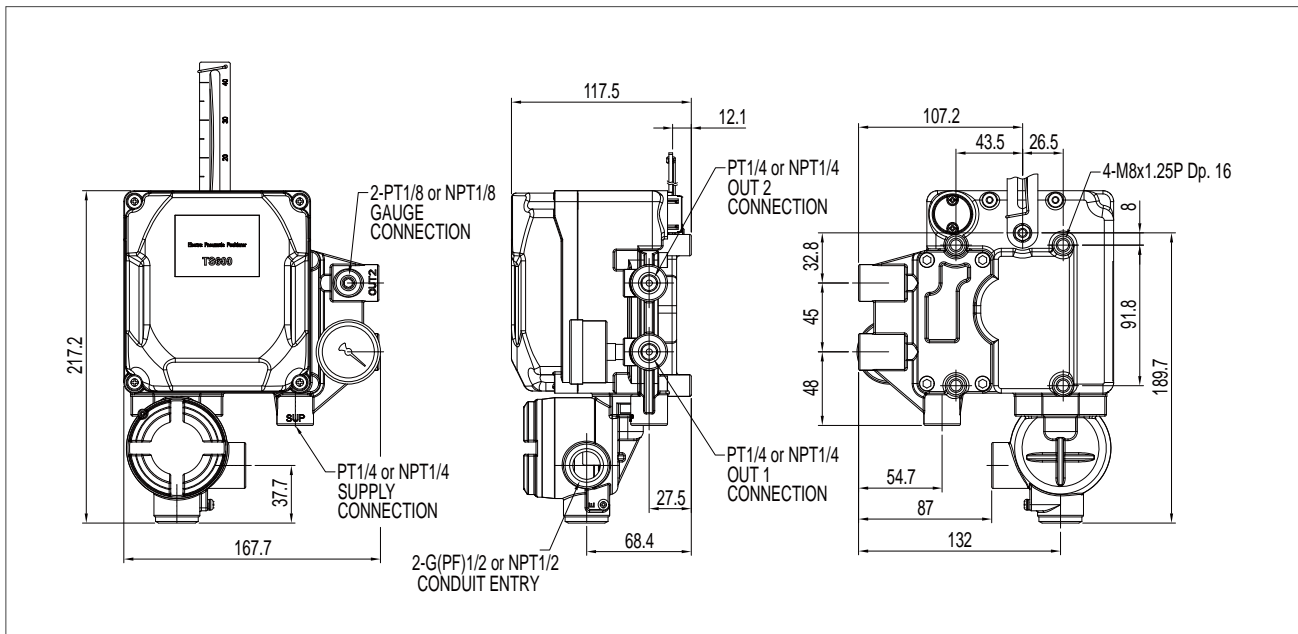
TS600R Bracket Dimension



TS600L Dimension

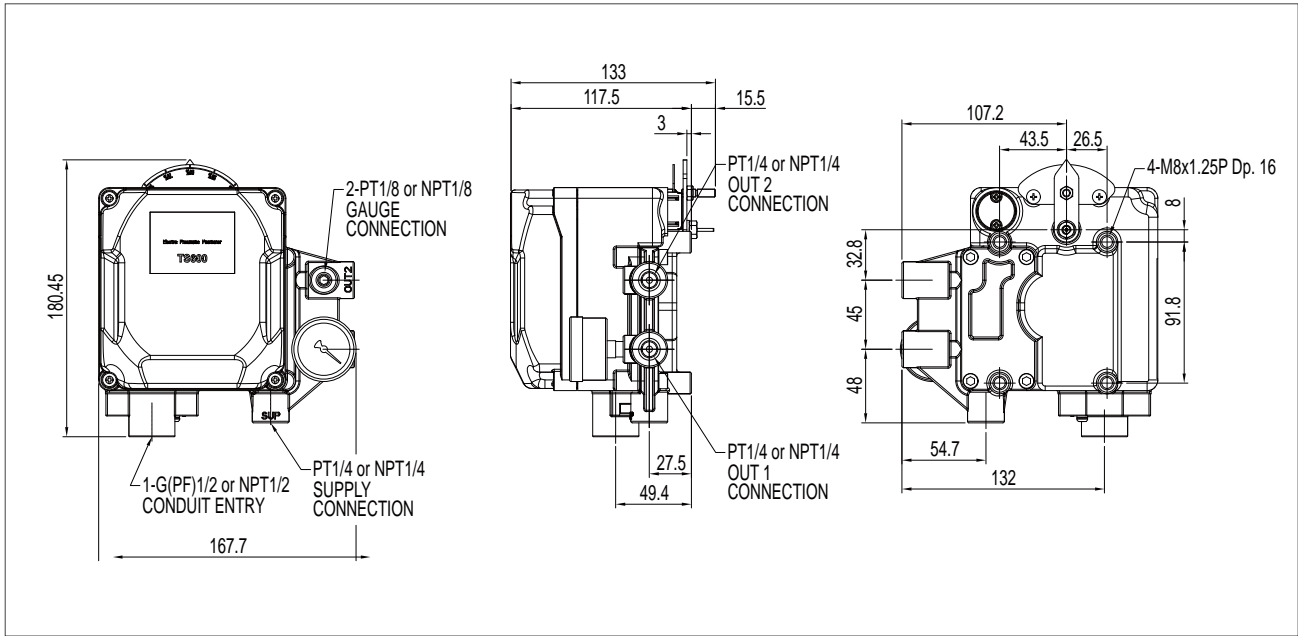


<TS600L Intrinsically Safe Type & Non-Explosion Type Dimension>

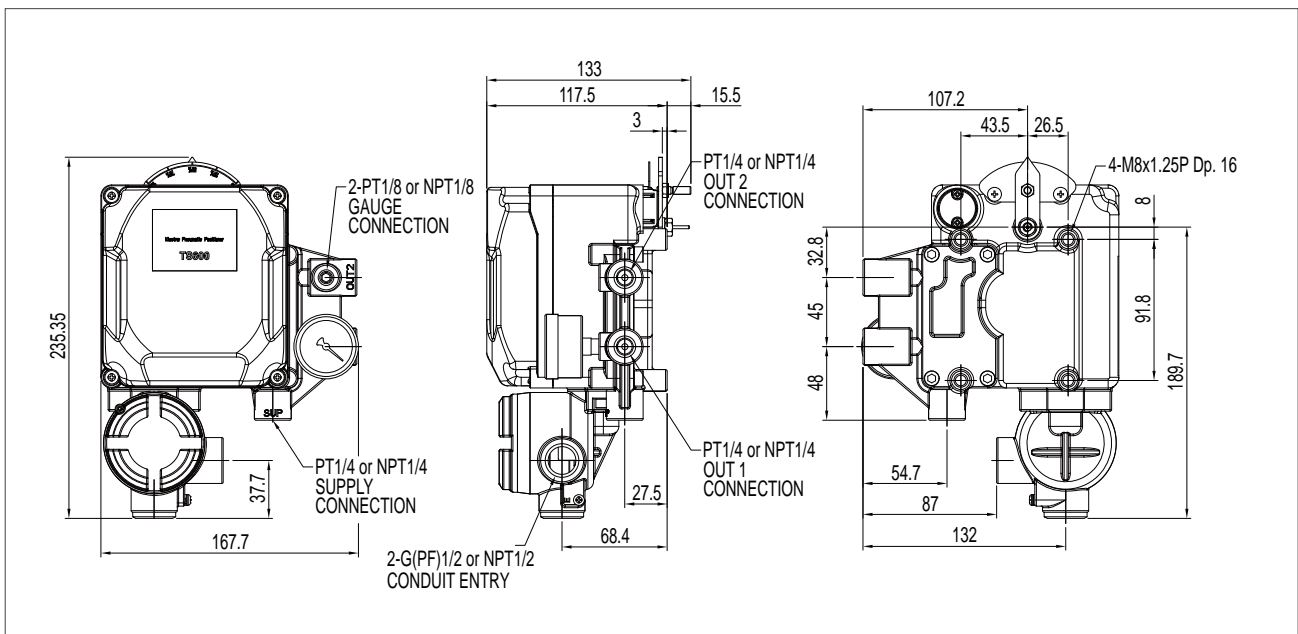


<TS600L Flame Proof Type Dimension>

TS600R Diemension



<TS600R Intrinsically Safe Type & Non-Explosion Type Diemension>




<TS600R Flame Proof Type Diemension>

Product Number

Model	TS600						
Motion Type	Linear type	L					
	Rotary type	R					
Explosion Proof Type	Non-Explosion Type	N					
	Ex dmb IIB T5/T6	B					
	Ex dmb IIC T5/T6	C					
	Ex ia IIC T5/T6	A					
Connection	<u>Conduit Entry</u>	<u>Air Connection</u>					
	G(PF)1/2	PT1/4			1		
	G(PF)1/2	NPT1/4			2		
	NPT1/2	NPT1/4			3		
Linear Lever Type	10 ~ 40mm					1	
	40 ~ 70mm					2	
	70~100mm					3	
	100~150mm					4	
Rotary Lever Type	M6 x 34L					1	
	NAMUR Type					5	
Ambient Temp	-30℃ ~ 70℃						S
	-30℃ ~ 120℃*						H
	-40℃ ~ 70℃						L
Option	None						0
	4~20mA Feedback signal						1
	Limit Switch Included (2xSPDT)						2
	4~20mA Feedback Signal with Limit Switch (2xSPDT)						3

* Note. With high temp positioner must be Non-Explosion type.

* Option is available for rotary type ONLY.

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