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Electro-Pneumatic Positioner
TS600 Series

- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- By-pass valve (A/M switch) installed

tissin
Solutions for control valve system

Electro-Pneumatic Positioner
TS600L (Linear type)

Description

TS600 Electro-Pneumatic Positioner controls the valve stroke in response to an input signal of 4-20mA from the control panel, DCS, or calibrator.

Certified

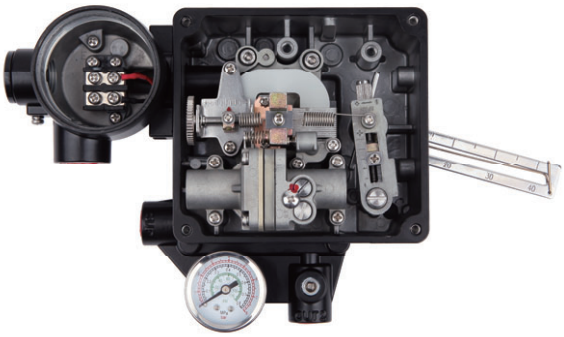
IECEx Ex EAC KCs Ex NEPSI CCC CE IP66

Features

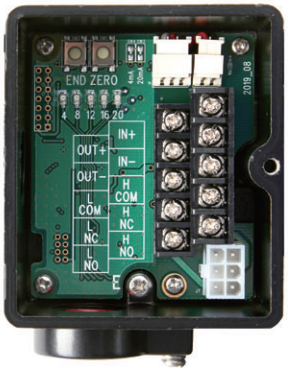
- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- By-pass valve (A/M switch) installed
- Air connection part is designed for detachability and it can be changed PT/NPT tapping threads in the field easily
- Integrated Flameproof and Intrinsically safe protection (ATEX&IECEx version)

Installation example

Internal structure



Position transmitter PCB



Electro-Pneumatic Positioner
TS600L (Linear type)

Specifications

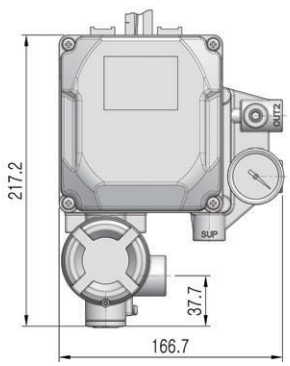
Model		TS600L(Single)	TS600L(Double)
Input signal		4~20mA DC	
Impedance		250 ±15Ω	
Supply pressure		0.14~0.7MPa	
Stroke		10~150mm	
Air connection		PT1/4, NPT1/4, G1/4	
Gauge connnection		PT1/8, NPT1/8	
Conduit		G(PF)1/2, NPT1/2, M20	
Explosion proof type		Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb	
Intrinsically safe parameters		Ui=28V, Ii=101mA, Pi=707mV	
Enclosure		IP66 (EN60529)	
Ambient Temp.	Operating Temp.	-20°C~70°C (Standard type)	
	Explosion proof	-40°C~60°C(T5) / -40°C~40°C(T6)	
Linearity		±1.0% F.S.	±2.0% F.S.
Sensitivity		±0.2% F.S.	±0.5% F.S.
Hysteresis		±1.0% F.S.	
Repeatability		±0.5% F.S.	
Air consumption		Below 2.5LPM (Sup=0.14MPa)	
Flow capacity		Over 80LPM (Sup=0.14MPa)	
Material		Aluminum die cast	
Weight		2.8kg	

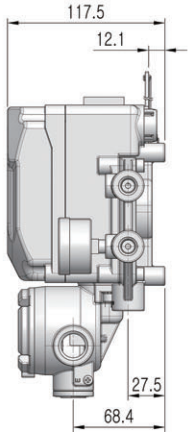
Product code

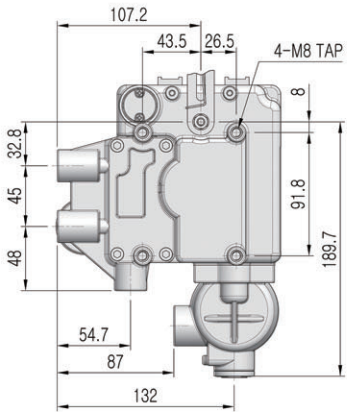
Model	TS600	L					
Acting type	Linear type	L					
Explosion proof type	Non-explosion proof		N				
	Ex dmb IIB T5/T6		B				
	Ex dmb IIC T5/T6		C				
	Ex ia IIC T5/T6		A				
	ATEX&IECEx version Ex db mb IIB/IIC T5/T6 Gb Ex ia IIC T5/T6 Gb		X				
Connection	Conduit entry	Air connection					
	G1/2	PT1/4		1			
	G1/2	NPT1/4		2			
	NPT1/2	NPT1/4		3			
	M20	NPT1/4		4			
	M20	G1/4		5			
Lever type	10 ~ 40mm				1		
	40 ~ 70mm				2		
	70 ~ 100mm				3		
	100~ 150mm				4		
Ambient Temp.	-20°C~70°C					S	
	-20°C~120°C *					H	
	-40°C~70°C					L	
	-60°C~70°C(For EAC)					U	
Option	None (Standard type)						0
	With 4~20mA Position transmitter (Positioner is RA type) *						1
	With 4~20mA Position transmitter (Positioner is DA type) *						2

Notes:
1. * Must be Non-explosion proof type。
2. Conduit entry for ATEX/IECEx/CCC/NEPSI should be “NPT1/2” or “M20”.

Dimension [Unit:mm]







Electro-Pneumatic Positioner
TS600R (Rotary type)

Description

TS600 Electro-Pneumatic Positioner controls the valve stroke in response to an input signal of 4-20mA from the control panel, DCS, or calibrator.

Certified

IECEx Ex EAC KCs Ex NEPSI CCC CE IP66

Features

- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- 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
- Integrated Flameproof and Intrinsically safe protection (ATEX&IECEx version)

Options

Option code No.1
TS600R with Position transmitter
(Non-explosion proof type)

Option code No.2 or No.4
TS600R with Limit switch
(Non-explosion proof type)

Option code No.3
TS600R with Limit switch
(Explosion proof type)

Option code No.5
TS600R with Position transmitter and
Limit switch (Explosion proof type)

Option code No.6
With external Limit switch
mounting device

Option code No.7
With Position transmitter and
external Limit switch mounting device

For KCS certificate type

Option code No.1
TS600R with Position transmitter
With LCD(Special type)

Electro-Pneumatic Positioner
TS600R (Rotary type)

Specifications

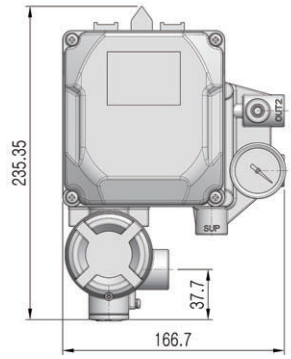
Model		TS600R(Single)	TS600R(Double)
Input signal		4~20mA DC	
Impedance		250 ±15Ω	
Supply pressure		0.14~0.7MPa	
Stroke		0~90°	
Air connection		PT1/4, NPT1/4, G1/4	
Gauge connnection		PT1/8, NPT1/8	
Conduit		G(PF)1/2, NPT1/2, M20	
Explosion proof type		Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb	
Intrinsically safe parameters		Ui=28V, Ii=101mA, Pi=707mV	
Enclosure		IP66 (EN60529)	
Ambient Temp.	Operating Temp.	-20°C~70°C (Standard type)	
	Explosion proof	-40°C~60°C(T5) / -40°C~40°C(T6)	
Linearity		±1.0% F.S.	±2.0% F.S.
Sensitivity		±0.2% F.S.	±0.5% F.S.
Hysteresis		±1.0% F.S.	
Repeatability		±0.5% F.S.	
Air consumption		Below 2.5LPM (Sup=0.14MPa)	
Flow capacity		Over 80LPM (Sup=0.14MPa)	
Material		Aluminum die cast	
Weight		2.8kg	

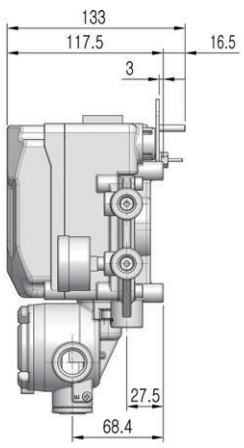
Product code

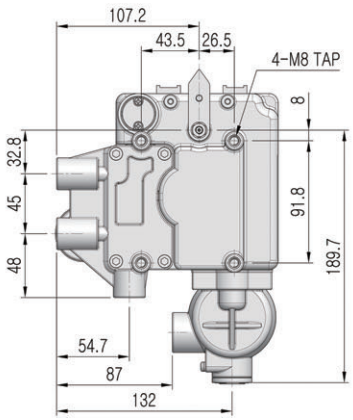
Model			TS600	R				
Acting type	Rotary type			R				
Explosion proof type	Non-explosion proof				N			
	Ex dmb IIB T5/T6				B			
	Ex dmb IIC T5/T6				C			
	Ex ia IIC T5/T6				A			
	ATEX&IECEx version Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb				X			
Connection type	Conduit entry	Air connection						
	G1/2	PT1/4				1		
	G1/2	NPT1/4				2		
	NPT1/2	NPT1/4				3		
	M20	NPT1/4				4		
	M20	G1/4				5		
Lever type	M6 x 39L						1	
	NAMUR						5	
Ambient Temp.	-20°C~70°C							S
	-20°C~120°C *							H
	-40°C~70°C							L
	-60°C~70°C (For EAC)							U
Option	None							0
	Internal PTM*							1
	Internal L/S*							2
	External L/S (TS410)							3
	Internal PTM + L/S*							4
	External PTM+L/S (TS510)							5
	With external L/S mounting device							6
	With PTM + L/S mounting device*							7
	With Dome cover*							8

Notes:
1. * Must be Non-explosion proof type.
2. Conduit entry for ATEX/IECEx/CCC/NEPSI/KCS should be “NPT1/2” or “M20”.
3. PTM is Position transmitter, L/S is Limit switch.

Dimension [Unit:mm]







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Solutions for control valve system

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www.tissin.co.kr

Version: PC-600EN_04/2024

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Electro-Pneumatic Positioner
TS600 Series

- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- By-pass valve (A/M switch) installed

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Solutions for control valve system

Electro-Pneumatic Positioner
TS600L (Linear type)

Description

TS600 Electro-Pneumatic Positioner controls the valve stroke in response to an input signal of 4-20mA from the control panel, DCS, or calibrator.

Certified

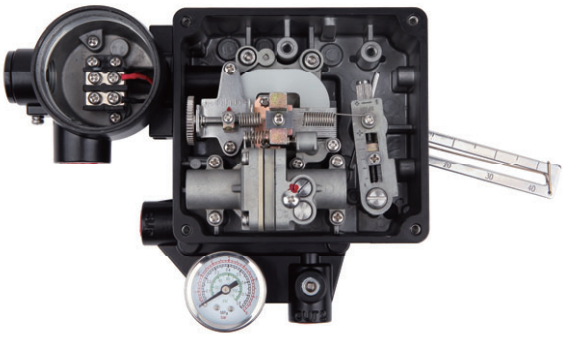
IECEx Ex EAC KCs Ex NEPSI CCC CE IP66

Features

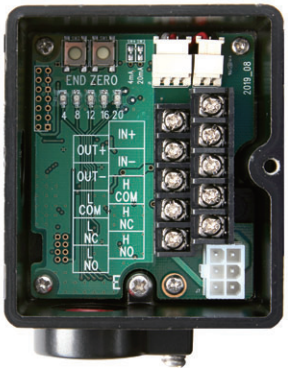
- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- By-pass valve (A/M switch) installed
- Air connection part is designed for detachability and it can be changed PT/NPT tapping threads in the field easily
- Integrated Flameproof and Intrinsically safe protection (ATEX&IECEx version)

Installation example

Internal structure



Position transmitter PCB



Electro-Pneumatic Positioner
TS600L (Linear type)

Specifications

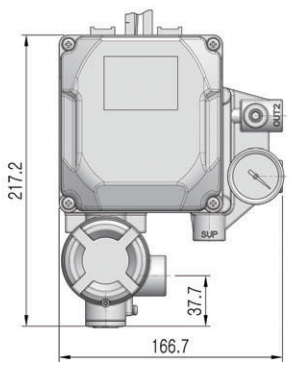
Model		TS600L(Single)	TS600L(Double)
Input signal		4~20mA DC	
Impedance		250 ±15Ω	
Supply pressure		0.14~0.7MPa	
Stroke		10~150mm	
Air connection		PT1/4, NPT1/4, G1/4	
Gauge connnection		PT1/8, NPT1/8	
Conduit		G(PF)1/2, NPT1/2, M20	
Explosion proof type		Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb	
Intrinsically safe parameters		Ui=28V, Ii=101mA, Pi=707mV	
Enclosure		IP66 (EN60529)	
Ambient Temp.	Operating Temp.	-20°C~70°C (Standard type)	
	Explosion proof	-40°C~60°C(T5) / -40°C~40°C(T6)	
Linearity		±1.0% F.S.	±2.0% F.S.
Sensitivity		±0.2% F.S.	±0.5% F.S.
Hysteresis		±1.0% F.S.	
Repeatability		±0.5% F.S.	
Air consumption		Below 2.5LPM (Sup=0.14MPa)	
Flow capacity		Over 80LPM (Sup=0.14MPa)	
Material		Aluminum die cast	
Weight		2.8kg	

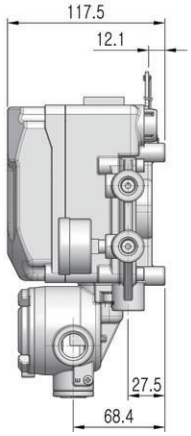
Product code

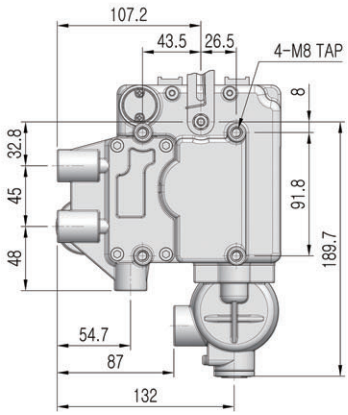
Model	TS600	L					
Acting type	Linear type	L					
Explosion proof type	Non-explosion proof		N				
	Ex dmb IIB T5/T6		B				
	Ex dmb IIC T5/T6		C				
	Ex ia IIC T5/T6		A				
	ATEX&IECEx version Ex db mb IIB/IIC T5/T6 Gb Ex ia IIC T5/T6 Gb		X				
Connection	Conduit entry	Air connection					
	G1/2	PT1/4		1			
	G1/2	NPT1/4		2			
	NPT1/2	NPT1/4		3			
	M20	NPT1/4		4			
	M20	G1/4		5			
Lever type	10 ~ 40mm				1		
	40 ~ 70mm				2		
	70 ~ 100mm				3		
	100~ 150mm				4		
Ambient Temp.	-20°C~70°C					S	
	-20°C~120°C *					H	
	-40°C~70°C					L	
	-60°C~70°C(For EAC)					U	
Option	None (Standard type)						0
	With 4~20mA Position transmitter (Positioner is RA type) *						1
	With 4~20mA Position transmitter (Positioner is DA type) *						2

Notes:
1. * Must be Non-explosion proof type。
2. Conduit entry for ATEX/IECEx/CCC/NEPSI should be “NPT1/2” or “M20”.

Dimension [Unit:mm]







Electro-Pneumatic Positioner
TS600R (Rotary type)

Description

TS600 Electro-Pneumatic Positioner controls the valve stroke in response to an input signal of 4-20mA from the control panel, DCS, or calibrator.

Certified

IECEx Ex EAC KCs Ex NEPSI CCC CE IP66

Features

- Fast response time and excellent stability
- Simple zero and span adjustment
- IP 66 enclosure
- Strong anti vibration performance
- 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
- Integrated Flameproof and Intrinsically safe protection (ATEX&IECEx version)

Options

Option code No.1
TS600R with Position transmitter
(Non-explosion proof type)

Option code No.2 or No.4
TS600R with Limit switch
(Non-explosion proof type)

Option code No.3
TS600R with Limit switch
(Explosion proof type)

Option code No.5
TS600R with Position transmitter and
Limit switch (Explosion proof type)

Option code No.6
With external Limit switch
mounting device

Option code No.7
With Position transmitter and
external Limit switch mounting device

For KCS certificate type

Option code No.1
TS600R with Position transmitter
With LCD(Special type)

Electro-Pneumatic Positioner
TS600R (Rotary type)

Specifications

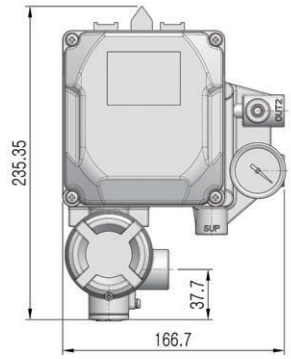
Model		TS600R(Single)	TS600R(Double)
Input signal		4~20mA DC	
Impedance		250 ±15Ω	
Supply pressure		0.14~0.7MPa	
Stroke		0~90°	
Air connection		PT1/4, NPT1/4, G1/4	
Gauge connnection		PT1/8, NPT1/8	
Conduit		G(PF)1/2, NPT1/2, M20	
Explosion proof type		Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb	
Intrinsically safe parameters		Ui=28V, Ii=101mA, Pi=707mV	
Enclosure		IP66 (EN60529)	
Ambient Temp.	Operating Temp.	-20°C~70°C (Standard type)	
	Explosion proof	-40°C~60°C(T5) / -40°C~40°C(T6)	
Linearity		±1.0% F.S.	±2.0% F.S.
Sensitivity		±0.2% F.S.	±0.5% F.S.
Hysteresis		±1.0% F.S.	
Repeatability		±0.5% F.S.	
Air consumption		Below 2.5LPM (Sup=0.14MPa)	
Flow capacity		Over 80LPM (Sup=0.14MPa)	
Material		Aluminum die cast	
Weight		2.8kg	

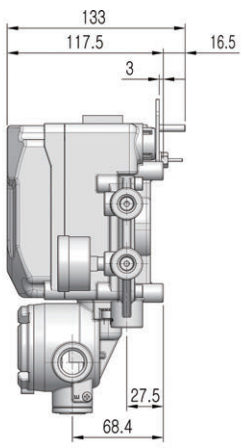
Product code

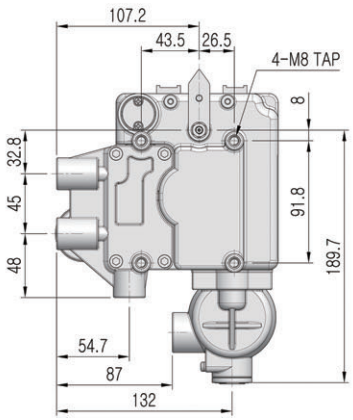
Model			TS600	R				
Acting type	Rotary type			R				
Explosion proof type	Non-explosion proof				N			
	Ex dmb IIB T5/T6				B			
	Ex dmb IIC T5/T6				C			
	Ex ia IIC T5/T6				A			
	ATEX&IECEx version Ex db mb IIC T6/T5 Gb Ex ia IIC T6/T5 Gb				X			
Connection type	Conduit entry	Air connection						
	G1/2	PT1/4				1		
	G1/2	NPT1/4				2		
	NPT1/2	NPT1/4				3		
	M20	NPT1/4				4		
	M20	G1/4				5		
Lever type	M6 x 39L						1	
	NAMUR						5	
Ambient Temp.	-20°C~70°C							S
	-20°C~120°C *							H
	-40°C~70°C							L
	-60°C~70°C (For EAC)							U
Option	None							0
	Internal PTM*							1
	Internal L/S*							2
	External L/S (TS410)							3
	Internal PTM + L/S*							4
	External PTM+L/S (TS510)							5
	With external L/S mounting device							6
	With PTM + L/S mounting device*							7
	With Dome cover*							8

Notes:
1. * Must be Non-explosion proof type.
2. Conduit entry for ATEX/IECEx/CCC/NEPSI/KCS should be “NPT1/2” or “M20”.
3. PTM is Position transmitter, L/S is Limit switch.

Dimension [Unit:mm]







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Solutions for control valve system

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www.tissin.co.kr

Version: PC-600EN_04/2024

POWER-GENEX®

ASD-5000 Series
Smart Valve Positioner

(Advanced Diagnostics Positioner)

ASD-5000 Positioner Series

ASD-5000 is the smart valve positioner which offers incomparable and stable control processing performance and advanced self-diagnostics for control valves. ASD-5000 has an outstanding durability and it has an improved control performance thanks to non-contact sensors with accuracy. ASD-5000 has a wide and multi-lingual display that provides diverse information and a current control situation with graph.

Features

Easy to use

- Quick auto-calibration by pushing one button
- Detecting RA (reverse acting) or DA (direct acting) automatically regardless of wrong air connections
- By-pass (auto/manual screw)
- Logical trend and histogram collection
- Providing a mounting bracket to meet IEC 60534-6-1 for linear valves
- Supporting a NAMUR mounting pattern VDI/VDE3845 (IEC60534-6-2) and providing a multi-size mounting bracket for rotary valves

Improved display performance

- Wide and multi-lingual full text graphical TFT LCD with high-resolution and clear graphic images
- Provides 3 steps to re-size information on LCD
- Shows a control history trend, a logical trend and histogram collection

HART communication

- HART (Ver. 7)
  FDI certified by FieldComm Group
  DTM certified by FDT Group

Non-contact position sensor

- Magnetic position sensor (MPS, non-contact)
- Resistant to vibration
- Excellent temperature characteristics

Improved durability

- Vibration and impact tolerant
- Resistant to dirty air and humidity

Diagnostics

- Self-diagnostics
- Advanced diagnostics with 4 x pressure sensor
- Valve signature
- Valve step response
- Partial stroke test (PST)

Options

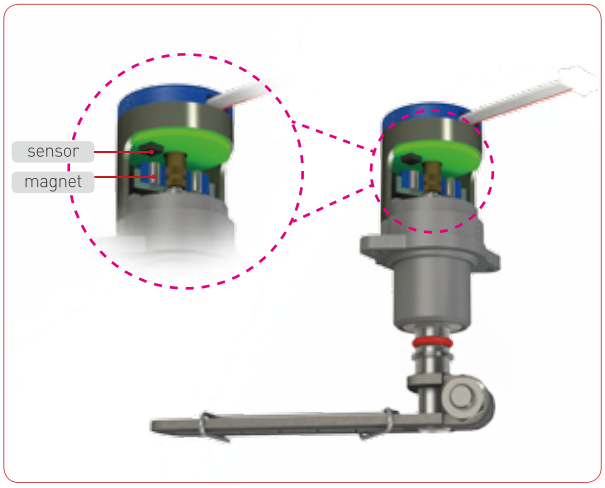
- Output position transmitter (4 - 20 mA)
- 2 x 24VDC software limit switch or 2 x SPDT mechanical limit switch
- Position indication beacon (dome)
- Stainless steel body (316SS)
- Intrinsically safe Ex ia IIC Gb & Ex ia IIIC Db
- HART communication (Ver. 7)
- Fail-freeze function (stay at last position)

Solid body design

- Aluminum housing / Epoxy-coated
- High corrosion-resistant stainless steel 316 body
- Protection class : IP66

Non-contact sensor providing high durability and improved control performance

- Higher durability than a feedback lever type
- Reduced hysteresis
- Provides a remarkable control performance under a harsh working environment with vibration



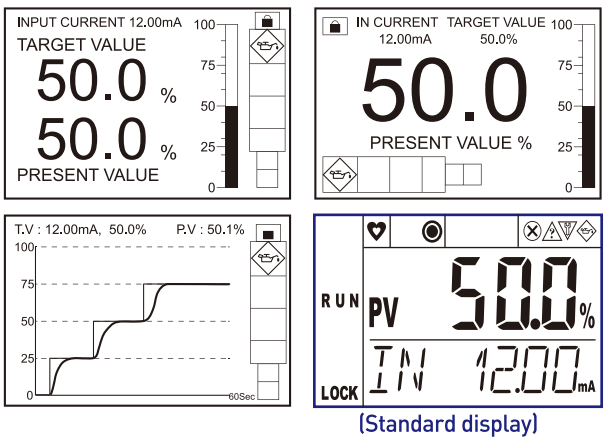
< MPS - Magnetic Position Sensor >

Easy and quick auto-calibration

Quick auto-calibration by pushing one button provides optimal positioner setting easily and fast.

Improved display (Advanced diagnostics option)

ASD positioner has a wide display with high visibility and it's possible to re-size information with 3 steps and available to show a control graph on LCD.



(Standard display)

Multi-lingual display (Advanced diagnostics option)

English, Chinese and Korean are available on LCD and more languages are planned to add through a continuous update

MODE DISPLAY VARIABLE MANUAL MONITORING AUTO TUNE PARAMETERS TEST	모 드 표시 변수 수동 제어 모니터링 오토 튜 파라메터 테스트
模 式 显示设置 手动模式 监测模式 自动模式 参数 测试	РЖМ О.ЗНАЧ Р.РЖМ МОН АВТО ПРМ ПРОВЕРКИ

Self-diagnostics

Advanced self-diagnostics is performed with pressure sensors installed inside of ASD positioner and results from self-diagnostics can be shown on LCD or transmitted over communication according to NAMUR NE107 standard.

Failure | Out of Specification | Maintenance Required | Check Function

Offline diagnostics (self-diagnostics)

Failure

- Loop current failure
- Loop voltage failure
- Supply air failure
- Auto calibration failure

Out of Specification

- Position high / low limit
- Temperature high / low limit
- Supply air high / low limit

Maintenance Required

- Not calibrated
- Use small angle
- Deviation error
- TUNE-point adjust error

Check Function

- PST Failure
- Use SHAPE parameter
- Valve friction high
- Check EMI / RFI

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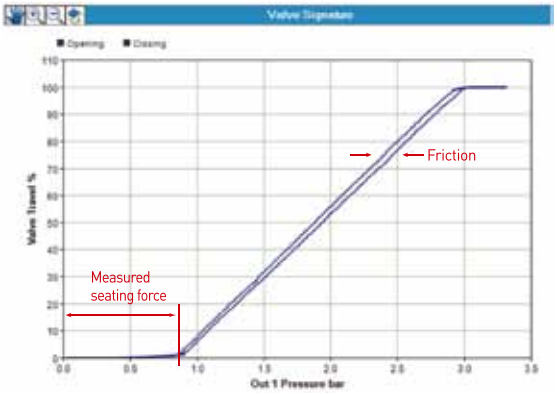
Online FDT DTM (Device Type Manager)

It's possible to make use of advanced diagnostics of ASD positioner by using an online DTM.

※ Available only with HART communication option

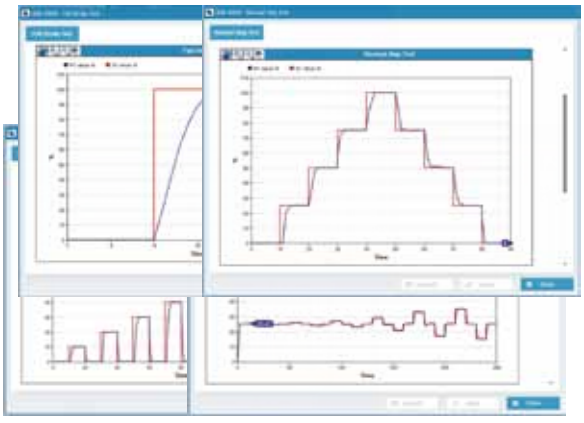
Online diagnostics



- **Valve signature (Advanced diagnostics option)**

Valve signature is the result which records air pressure change and valve position according to ramp input signals. The following values about performance of valve control are obtained from this valve signature and it's possible to confirm a current valve status (integrity)

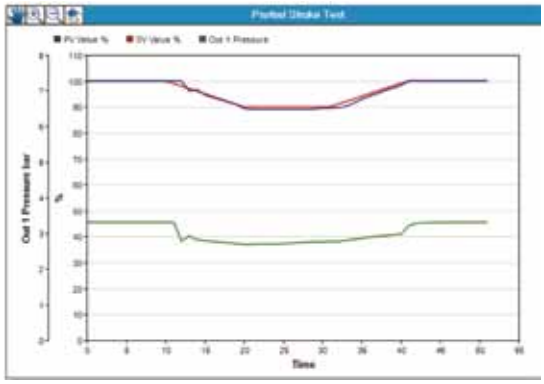
a. Seating force
b. Friction
c. Spring range



- **Valve step response**

This is the result which shows a valve control status with on-off signals or on every 25% step.

a. Full stroke test
b. Normal step test
c. Large step test
d. Small step test
e. Trace test



- **PST (Partial Stroke Test)**

This is the function which records changes by operating the positioner with the set values automatically without influencing system in an automatic control mode.

It's possible to confirm a valve status (integrity) by comparing the past one with the present one.

Technical specifications
ASD-5000 Smart valve positioner

Input	
Standard	
Supply power	4 to 20mA, Loop powered
Max.	50mA
Min.	3.6mA
Load voltage at 20mA	6.8V
Impedance at 20mA	340 Ω
HART Communication ver. 7	
- Without advanced diagnostics	
Load voltage at 20mA	7.8V
Impedance at 20mA	390 Ω
- With advanced diagnostics (with 4 pressure sensors)	
Load voltage at 20mA	9.5V
Impedance at 20mA	475 Ω
Fail Freeze option (Fail freeze mode : Input signal <3.6mA)	
- Standard	8.3V , 415Ω @ 20mA
- HART Communication	9.3V , 465Ω @ 20mA
- HART + Advanced diagnostics	11 V , 550Ω @ 20mA

Output	
Range	0 – 7 bar (0 – 100 psi)
Air consumption	2.5 L.P.M
	at 1.4 bar (20 psi) supply pressure
	3.0 L.P.M
	at 6 bar (90 psi) supply pressure
Air Capacity	250 L.P.M
	at 1.4 bar (20 psi) supply pressure
	300 L.P.M
	at 6 bar (90 psi) supply pressure

Air Supply	
Instrument air	free of oil, water and dust acc. to
	DIN/ISO 8573-1 pollution and oil
	content according to Class 3
Supply pressure	1.4 to 7 bar (20 to 100 psi)

Applicable actuators	
Operating type	Linear, Rotary, Remote
Acting type	Single, Double
Action	direct action(DA), reverse action(RA)
Linkage type	
Travel range	Linear : 10 – 120 mm
	Rotary : 30˚ – 150˚ rotation angle
Linkage-less type	
Travel range	Linear : 10 – 120 mm
	Rotary : 30˚ – 150˚ rotation angle
	Remote : 3, 5, 10, 15, 20, 30m
※ Other travel range on request	

Characteristics	
Linearity	< ±0.5% F.S
Sensitivity	< ±0.3% F.S
Hysteresis	< ±0.3% F.S
Repeatability	< ±0.2% F.S
Performance characteristic	Linear, Shape (EQ%, Quick), User set

Enclosure	
Material	Aluminum die-cast + Epoxy-coated
	316 Stainless steel housing
Protection class	IP66
Pneumatic connections	PT 1/4
	NPT 1/4
Electrical connections	PF 1/2
	NPT 1/2
	M20 x 1.5
Weight	2.4 kg – Aluminum die-cast
	4.5 kg – Stainless steel 316

Hazardous area approvals	
IECEx	Intrinsically Safe, Ex ia IIC T6/T5 Gb Ex ia IIIC T85 C,T100 C Db
ATEX	
KCs	
CCC / EAC	

Environmental influences	
Ambient temperature	Standard : -30 to 80℃ (-22 to 176℉)
Operating temperature of LCD	-30 to 80℃ (-22 to 176℉)
Vibration	2G, 5 to 400 Hz
Humidity	The dew point should be at least 10℃ lower than the temperature of this device.

Feedback options	
Position Transmitter (Output signal)	
Output signal	4-20mA, 2-wired
Supply voltage	12-30VDC
Load Limitation	0 – 1000 Ω (Normally 650Ω at 24VDC)
Linearity	± 0.5%
Limit switches – Programmable software limit switches	
Type	2 x software limit switch
Rating	24VDC
Limit switches – Micro switches	
Type	2 x SPDT
Rating	5A @ 220VAC
Contact	Silver alloy
Ambient temperature	-30 - +85℃
Limit switches - proximity sensors	
Type	NAMUR NC or NO
Supply voltage	Nominal 8.2VDC (5 – 11 VDC)
Current consumption	Target not detected > 3mA
	Target detected < 1mA
Ambient temperature	-40 - +100℃

Mounting brackets	
Linear type	IEC 60534-6-1
Rotary type	IEC 60534-6-2

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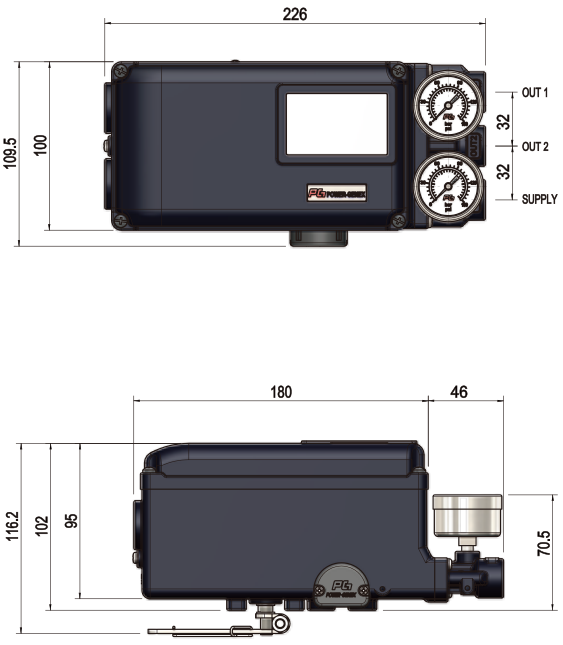
ASD-5000 Series How to order

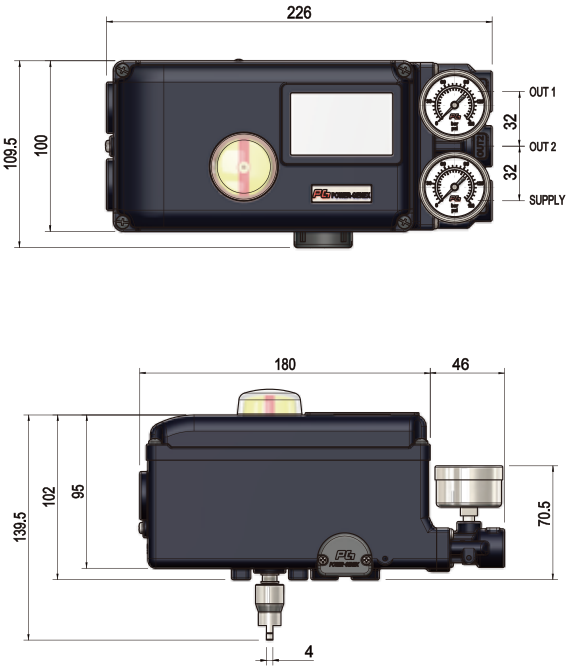
				①	②	③		④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫		⑬	⑭	⑮
ASD-5000 Series positioner			ASD - 5	X	X	X	-	X	X	X	X	X	X	X	X	X	-	X	X	X
1. Body material	Aluminum die-cast			0																
	Stainless steel 316			1																
2. Actuator operation	Linear				0															
	Rotary				1															
3. Feedback type	Linkage type					0														
	Linkage-less type (Only for Rotary)					1														
	Remote type					2														
4. Hazardous area & Protection	Intrinsically Safe, Ex ia IIC							I												
		Ex ia IIIC T85 C,T100 C																		
	Weatherproof to IP66							W												
5. Feedback size	Linkage type	Linear type (ASD-5x00, 5x02)	Stroke 10 – 60mm						B											
			Stroke 10 - 120mm						C											
			*Others on request																	
		Rotary type (ASD-5x10, 5x12)	Fork lever						F											
			NAMUR shaft						N											
	Linkage -less type	Rotary type (ASD-5x11, 5x12)	M6 Connector						6											
			M8 Connector						8											
6. Gauge (Out1, Out2 gauge)	6 bar (90 psi)									1										
	10bar (150 psi)									2										
7. Beacon indicator	None										N									
	Beacon indicator (90°) (Not available with remote type)										Y									
8. Position feedback	None											N								
	Position transmitter (4-20mA)											O								
	Advanced diagnostics + position transmitter											A								
9. Limit switches	None												N							
	2 x 24VDC software limit switch												L							
	2 x micro switch (SPDT)												S							
	2 x proximity sensor												P							
10. Communication	None													N						
	HART communication													H						
11. Connection threads (pneumatic – electrical)	PT(Rc) 1/4 – PF(G) 1/2														3					
	NPT 1/4 – NPT 1/2														4					
	PT(Rc) 1/4 – M20x1.5														5					
	NPT 1/4 – M20x1.5														6					
	PF(G) 1/4 – M20x1.5														7					
	PF(G) 1/4 – PF(G) 1/2														8					
	NPT 1/4 – PF(G) 1/2														9					
	※ Others on request																			
12. Mounting bracket	None															N				
	Linear type / IEC 60534-6-1															L 0				
	Linear type / IEC 60534-6-1 & Feedback pin guide lever set															L 1				
	Rotary type / IEC 60534-6-2															R				
13. Remote cable (only for ASD-5002)	3, 5, 10, 20, 30m																	X		
14. Temperature	Standard (-30 - +80℃)																		Blank	
	Low temperature (-40 - +80℃), EAC certified type (-60 - +80 ℃)																		LT	
15. Fail position	Fail Safe (Standard)																			Blank
	Fail Freeze (Stay at last position)																			FL

Dimensions (Linkage type)

ASD-5000 Linear type

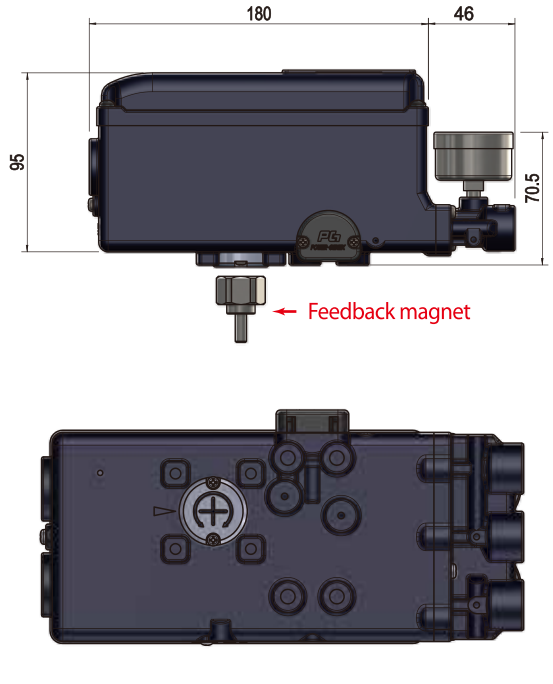


ASD-5010 Rotary type



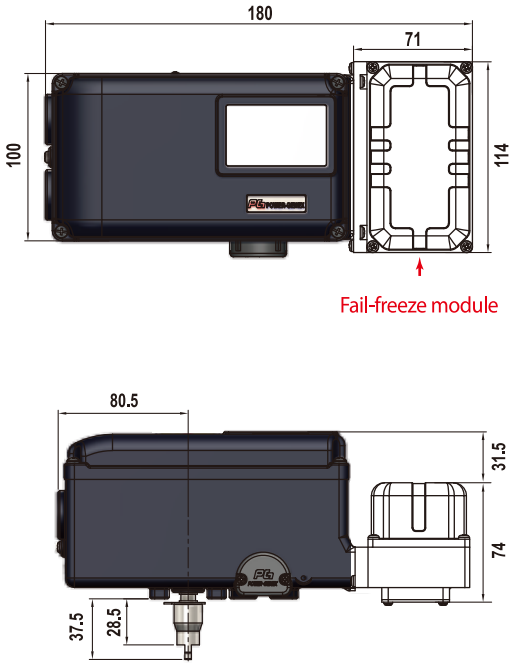
Dimensions (Linkage-less type)

ASD-5011 Rotary type



Fail Freeze Type (Fail last)

ASD-5 Linear / Rotary



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All innovation
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