

# **AUTROL<sup>®</sup>** **Smart Pressure Transmitter** **with Diaphragm Seal**



## **MODEL APT3700N-L**

**DUON System Co., Ltd.**

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# APT3700N-L



### Description of Product

The APT3700N-L Smart Pressure Transmitter is a micro processor-based high performance transmitter, which has flexible pressure calibration and output, automatic compensation of ambient temperature and process variable, configuration of various parameters, communication with HART protocol. The application is very various, as measuring pressure, flow and level by application method. All data of sensor is to be input, modified and stored in EEPROM.

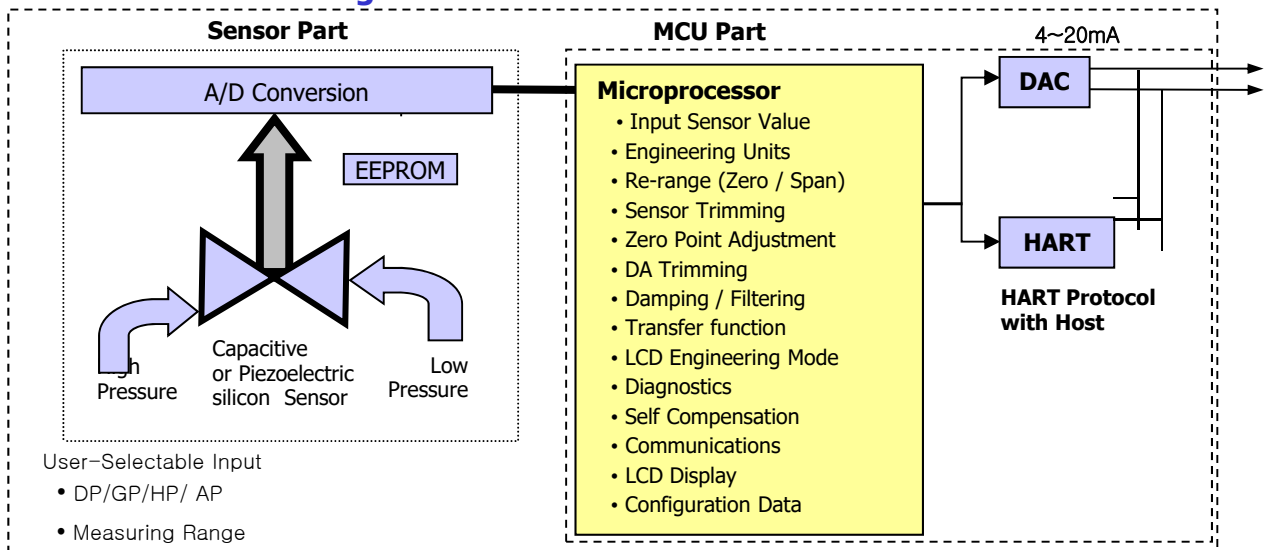
### Function

- Various Output : 4 ~20mA , Digital Signals
- Setting Various Parameters : Zero/Span, Trim, Unit, Fail-mode, etc.
- Self Diagnostic Function : Sensor, Memory A/D Converter, Power, etc
- Digital Communication with HART protocol
- Explosion-proof Approval KCs
- Qualified per IEEE Std 344-1987/2004 and IEEE Std 323-1983/2003, NRC Regulatory Guide 1.180 (Rev.1)

### Features

- Superior Performance
  - High Reference Accuracy :  $\pm 0.25\%$  of Calibrated Span
  - Long-Term Stability :  $\pm 0.25\%$  URL per 24 months
  - High Rangeability ( 100 : 1 )
- Flexibility
  - Data Configuration with HART Configurator
  - Zero Point Adjustment
- Reliability
  - Continuous Self-Diagnostic Function
  - Automatic Ambient Temperature Compensation
  - Fail-mode Process Function
  - EEPROM Write Protection
  - Equipment Qualifications
    - EMI / RFI Test

### Functional Block Diagram



## Transmitter Description

### Electronics Module

The Electronics module consists of a circuit board sealed in an enclosure.

There are a MCU module, a power module, an analog module and a terminal module in a transmitter. The MCU module acquires the digital value from the analog module and apply correction coefficients selected from EEPROM.

The output section of the power module converts the digital signal to a 4~20 mA output.

The MCU module communicates with the HART-based Configurator or Maintenance System such as HTT 275 or 375 and AMS.

The Power module have a DC-to-DC Power conversion circuit and an Input/output isolation circuit.

An optional LCD module plugs into the MCU module and displays the digital output in user-configured unit.

### Sensor Inputs

The model APT3700N-L is available in a differential pressure sensor of a capacitance type.

The capacitance pressure sensor measures differential and gauge pressure and is commonly used in flow and level applications. Both sides in the capacitance sensor transmit process pressure from the process isolators to the sensor.

The model APT3700N-L is available in a absolute pressure and high gage pressure sensor of a piezo-resistive type and measures absolute/high gage pressure.

The sensor module converts the capacitance or the resistance to the digital value.

The MCU module calculates the process pressure based on the digital value.

The sensor modules include the following features:

- The software of the transmitter compensates for the thermal effects, improving performance.
- Precise Input Compensation during operation is achieved with temperature and pressure correction coefficients that are characterized over the range the transmitter and stored in the sensor module EEPROM memory
- EEPROM stores sensor information and correction coefficients separately from MCU module, allowing for easy repair, reconfiguration and replacement

### Basic Setup

ATP3700N-L Pressure transmitter can be easily configured from any host that support the HART protocol.

- Operational Parameters.
- 4~20mA Points (Zero/Span)
- Engineering Units
- Damping Time : 0.25 ~ 60 sec
- Tag : 8 alphanumeric characters
- Descriptor : 16 characters
- Message : 32 characters.
- Date : day/month/year

### Calibration and Trimming

- Lower/Upper Range (zero/span)
- Sensor Zero Trimming
- Zero Point Adjustment
- DAC Output Trimming
- Transfer Function
- Self-Compensation

### Self-Diagnosis and Others

- CPU & Analog Module Fault Detection
- Communication Error
- Fail-mode Handling
- LCD Indication
- Temperature Measurement of Sensor Module

## Performance Specifications

### Reference Accuracy of Calibrated Span

- for ranges 4 through 7  
 $\pm 0.25\%$  of Span for  $0.1URL \leq \text{Span} \leq URL$   
 $\pm [0.25 + (0.005 \times (URL/\text{span}))]\%$  of Span  
for  $0.01URL \leq \text{Span} \leq 0.1URL$

### Zero and Span Adjustment Limits

- Zero and span values can be set anywhere within the range limits stated in Table 1. Span must be greater than or equal to the minimum span stated in Table 1

### Output (Analog Current and Digital Data)

- Two wire 4~20mA  
user-configurable for linear or square root output, digital process value superimposed on 4~20mA signal, available to any host that conforms to the HART protocol

### Power Supply & Load Requirement

- **External power supply required.**  
Transmitters operate on 12.5 to 45 V dc.  
\* 250 ohm load-- 17.5 Vdc  
\* up to a 550 ohm load -- 24 Vdc  
Max. Loop Resistance = ( E - 11.9 ) / 0.022  
(E = Power Supply Voltage)

- **Supply Voltage**  
12.5 ~ 45 Vdc -- operation  
17.5 ~ 45 Vdc -- HART Communications  
\* 0.9W @ 45Vdc

- **Loop Load**  
0 ~ 1500 ohm -- Operation  
250 ~ 550 ohm -- HART Communications

### EMC Conformity Standards

- RG 1.180,  
IEC61000-4-2(EMC, ESD, EFT/Burst, Surge)

### Update Time and Turn-On Time

- Update Time : 0.2 seconds
- Turn-On Time : 3 seconds

### Failure Mode

- Fail High : Current ≥ 21.1 mA
- Fail Low : Current ≤ 3.78 mA

### Operating Temperature

- -40°C to 85°C (without condensing)

### Process Temperature Limits

- Refer to Ordering information

### Isolation

- Input/output isolated to 500Vrms (707 Vdc)

### Working Pressure Limits (silicone oil)

- 2000 psi (13.79 MPa)

### Hydrostatic Test Pressure

- 3000 psi (20.7 MPa)

### Burst Pressure

- 10000 psi (68.9MPa)

## Physical Specifications

### Range and Sensor Limits

- Refer to "Ordering Information".

### Wetted Materials

- Isolating Diaphragms ---- 316L SST, Monel,  
Tantalum, HAST-C
- Drain/Vent Valves ----- 316 SST
- Flanges and Adapters ---- 316 SST
- O-ring ----- Viton, PTFE

### Non-wetted materials

- Fill Fluid ----- Silicone oil or Inert fill
- Bolts ----- Stainless Steel
- Electronics Housing -- Aluminum, 316SST, Flameproof  
and Waterproof (IP67)
- Cover O-ring ----- Buna-N
- Paint ----- Polyester
- Mounting Bracket ---- 2-inch Pipe, 304 SST, Painted  
Carbon Steel with 304 SST U-bolt
- Nameplate ----- 304 SST

### Electrical connections

- 1/2-14 NPT conduit with M4 Screw Terminals

## QAP

### Quality Assurance Program

In accordance with KEPIC-QAP & KEPIC-EN

## Hazardous Location Certifications (default)

### KCs Approvals (KCs: Korea Occupational Safety & Health Agency) K1 Code :

Flameproof for Class I, Zone 1 : Ex d IIC T6, IP67

Ambient Temperature : -20 to 60 °C

Max. Process Temperature : 80 °C

Power Supply : Max. 45 Vdc

Output : 4 to 20 mA + HART, Max. 22 mA

### KTL TEST REPORT (No. 14-023955-04)

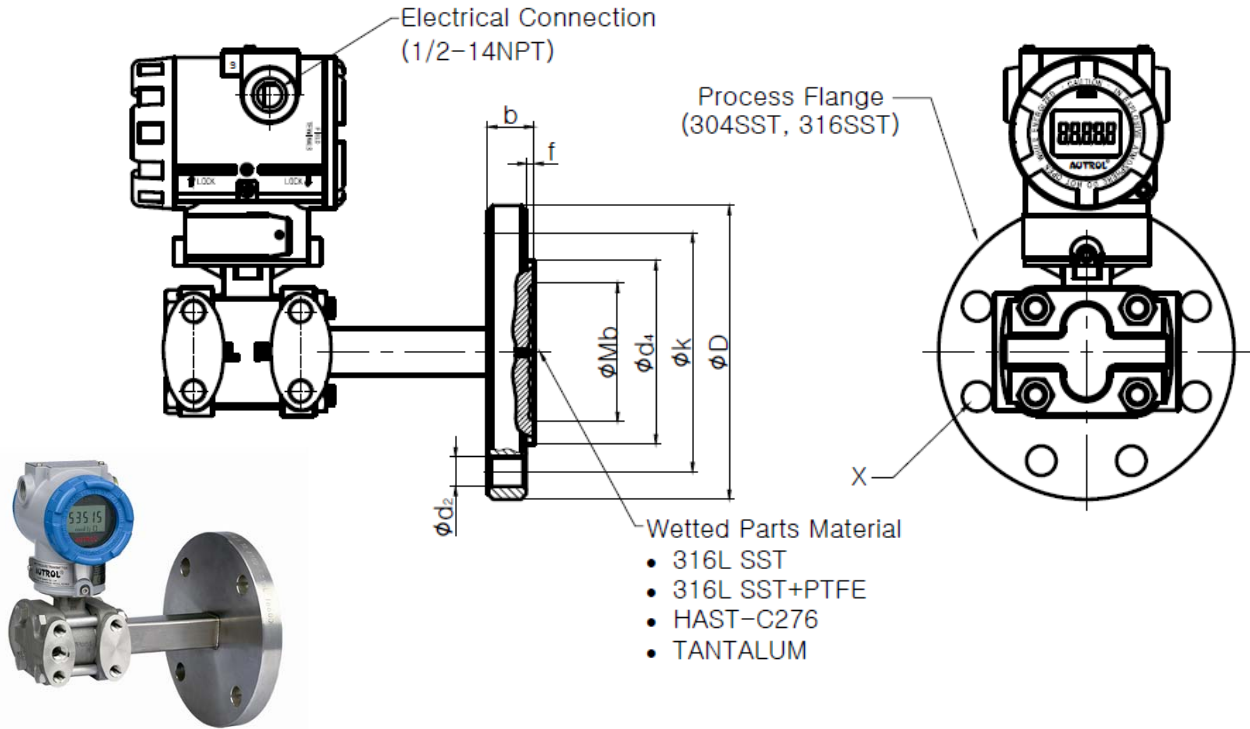
Test for degree of protection provided by enclosures (IP Code) : IP 66

## Pressure Limits & Hydrostatic Test Conditions

Model	Range Code	Static Pressure (Overpressure Limits)	Hydrostatic Test Pressure
APT3700N-L	Range 4-7	13.79 MPa (2,000 psig)	23.7 MPa (3,000 psi)

**Dimensional Drawing (mm)**

For Flush Diaphragm Seal and Direct Mount Type Transmitter



**Flange Size: 100mm (4 inch)**

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	229	24	19	190	1.5	157	8
ANSI Class 300		254	32	22	200			
JIS 10K	89	210	18	19	175	2	157	8
JIS 20K		225	24	23	185			
DIN PN 10/16	89	220	20	18	180	3	157	8
DIN PN 25/40		235	24	22	190			

**Flange Size: 80mm (3 inch)**

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	190	24	19	152.5	1.5	127	4
ANSI Class 300		210	29	22	168.5			8
JIS 10K	89	185	18	19	150	2	127	8
JIS 20K		200	22	23	160			
DIN PN 10/16	89	200	20	18	160	3	138	8
DIN PN 25/40			24	22				

**Flange Size: 50mm (2 inch)**

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	61	152	19	19	120.5	1.5	92	4
ANSI Class 300		165	22		127			8
JIS 10K	61	155	16	19	120	2	96	4
JIS 20K			18					8
DIN PN 10/16	61	165	20	18	125	3	102	4
DIN PN 25/40								

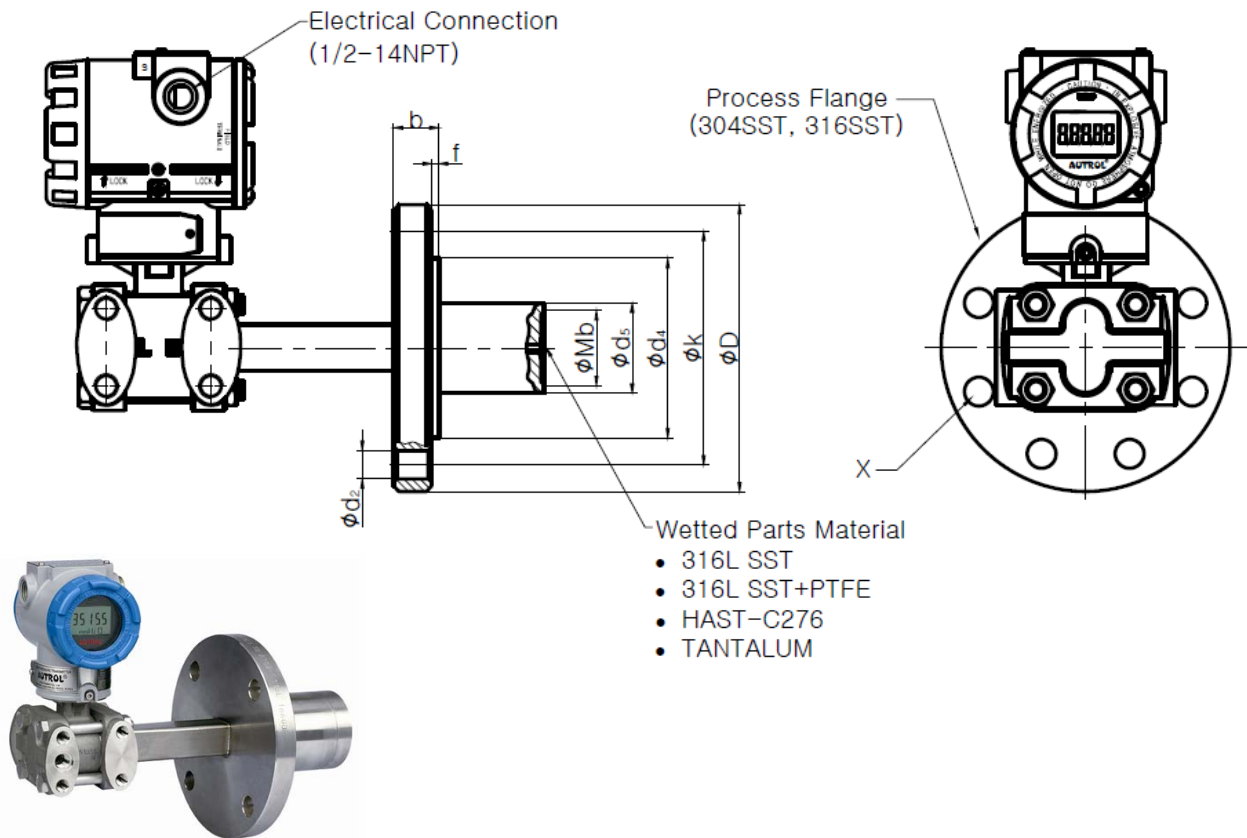
Ordering Information

MODEL NO.	Code	Description					
APT3700N	LFD	Flush Diaphragm Seal and Direct Mount Type Transmitter					
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)					
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)					
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)					
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)					
	X	Special					
Mounting Flange Size / Material		ANSI		DIN		JIS	
	S2	2-inch	SST	DN 50	SST	50 A	SST
	S3	3-inch	SST	DN 80	SST	80 A	SST
	S4	4-inch	SST	DN 100	SST	100 A	SST
	SX	Special	SST	Special	SST	Special	SST
Mounting Flange Rating		ANSI		DIN		JIS	
	A1	Class 150		D1	PN 10/16	J1	10 K
	A2	Class 300		D2	PN 25/40	J2	20 K
	AX	Special		DX	Special	JX	Special
Wetted Parts Material Diaphragm / Others		DIAPHRAGM			OTHERS		
	S	316L SST			316L SST		
	P	316L SST + Teflon			316L SST		
	H	Hastelloy C-276			316L SST		
	T	Tantalum			316L SST		
	X	Special			Special		
Fill Fluid		FILL FLUID			TEMPERATURE LIMITS		
	2	D.C Silicone 200			-45 to 205 °C (-49 to 400 °F)		
	7	D.C Silicone 704			0 to 315 °C ( 32 to 600 °F)		
	X	Special			Special		
Materials of Construction	SS	FLANGE			VENT / DRAIN VALVE		
		316 SST			316 SST		
Low Side	W	Without Process Adapter					
	N	With 1/2"-14 NPT F Process Adapter (316 SST)					
	C	Closed					
	X	Special					
Electrical Connection	1	1/2"-14NPT F					
	2	G1/2					
	X	Special					
Nuclear Data	Safety Class		Seismic Category		Quality Class	Environmental Zone	Electric Class
	N (None-Safety)		3		A (T, R) S	O or O1	NE (Non-1E)
Option	M1	LCD Indicator (5-Digit)			LPI	Lighting Protector (Internal)	
	K	Oil Free Finish			ST	Stainless Steel Housing	
	A	Vaccum Service			X	Special Order	

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*" before order.

## Dimensional Drawing (mm)

For Extended Diaphragm Seal and Direct Mount Type Transmitter



### Flange Size: 100mm (4 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	89	229	24	19	190	1.5	157	89	8
ANSI Class 300		254	32	22	200				
JIS 10K	89	210	18	19	175	2	157	89	8
JIS 20K		225	24	23	185				
DIN PN 10/16	89	220	20	18	180	3	157	89	8
DIN PN 25/40		235	24	22	190				

### Flange Size: 80mm (3 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	76	190	24	19	152.5	1.5	127	76	4
ANSI Class 300		210	29	22	168.5				8
JIS 10K	76	185	18	19	150	2	127	76	8
JIS 20K		200	22	23	160				
DIN PN 10/16	76	200	20	18	160	3	138	76	8
DIN PN 25/40			24	22					

### Flange Size: 50mm (2 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	48	152	19	19	120.5	1.5	92	48	4
ANSI Class 300		165	22		127				8
JIS 10K	48	155	16	19	120	2	96	48	4
JIS 20K			18						8
DIN PN 10/16	48	165	20	18	125	3	102	48	4
DIN PN 25/40									

Ordering Information

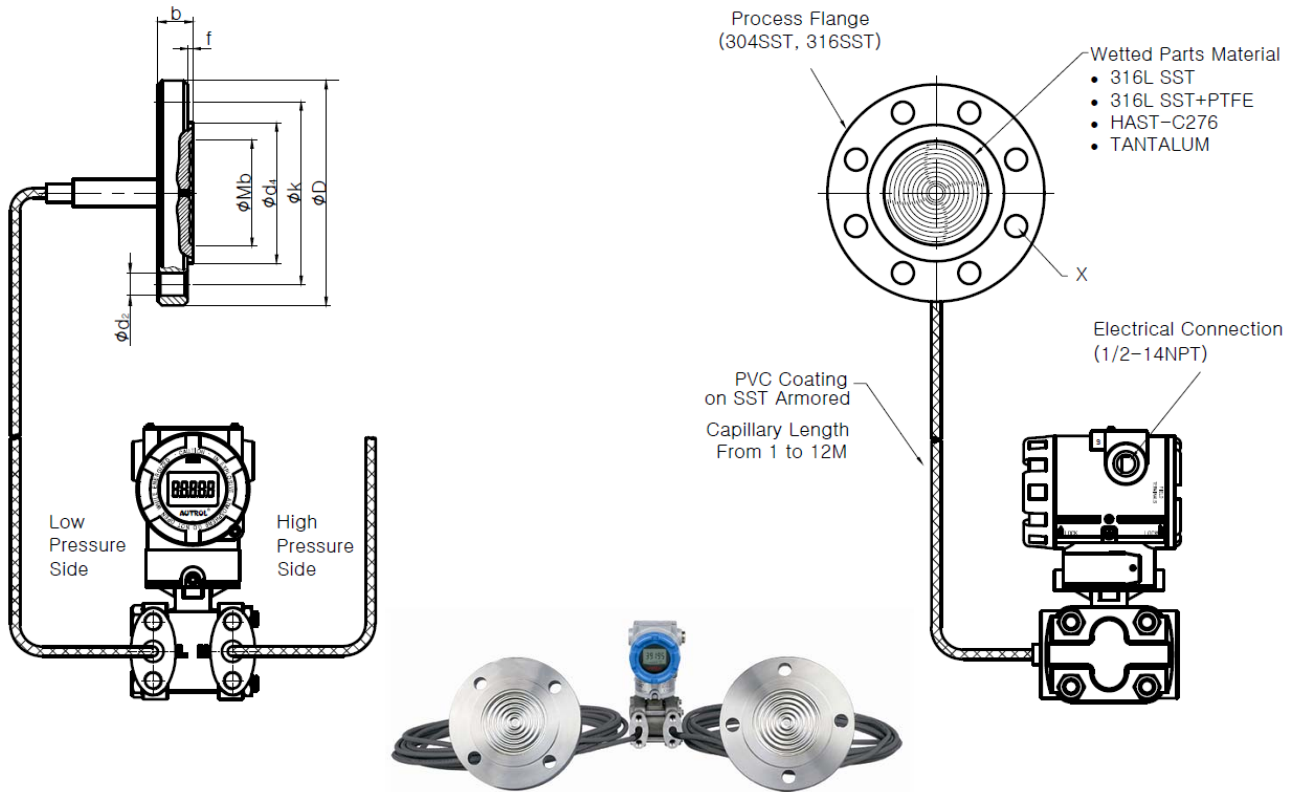
MODEL NO.	Code	Description						
APT3700N	LED	Extended Diaphragm Seal and Direct Mount Type Transmitter						
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)						
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)						
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)						
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)						
	X	Special						
Mounting Flange Size / Material	S2	ANSI		DIN		JIS		
		2-inch	SST	DN 50	SST	50 A	SST	
	S3	ANSI		DIN		JIS		
		3-inch	SST	DN 80	SST	80 A	SST	
	S4	ANSI		DIN		JIS		
4-inch	SST	DN 100	SST	100 A	SST			
Mounting Flange Rating	S2	ANSI		DIN		JIS		
		Class 150	D1	PN 10/16	J1	10 K		
	S3	ANSI		DIN		JIS		
		Class 300	D2	PN 25/40	J2	20 K		
AX	ANSI		DIN		JIS			
Special	SST	Special	SST	Special	Special			
Extension Length	□□	□□ x 10 mm						
		Exp: 15 --> 150mm, 12--> 120mm						
Wetted Parts Material Diaphragm / Others	S	DIAPHRAGM			OTHERS			
		316L SST			316L SST			
		316L SST + Teflon			316L SST			
		Hastelloy C-276			316L SST			
		Tantalum			316L SST			
X	Special			Special				
Fill Fluid	2	FILL FLUID			TEMPERATURE LIMITS			
		D.C Silicone 200			-45 to 205 °C (-49 to 400 °F)			
		D.C Silicone 704			0 to 315 °C ( 32 to 600 °F)			
X	Special			Special				
Materials of Construction	SS	FLANGE			VENT / DRAIN VALVE			
		316 SST			316 SST			
Low Side	W	Without Process Adapter						
		With 1/2"-14 NPT F Process Adapter (316 SST)						
		Closed						
		Special						
Electrical Connection	1	1/2"-14NPT F						
		G1/2						
		Special						
Nuclear Data	Safety Class		Seismic Category	Quality Class	Environmental Zone	Electric Class		
	N (None-Safety)		3	A (T, R) S	O or O1	NE (Non-1E)		
Option	M1	LCD Indicator (5-Digit)			LPI	Lighting Protector (Internal)		
		Oil Free Finish				ST	Stainless Steel Housing	
		Vaccum Service					X	Special Order

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*\*\*" before order.



## Dimensional Drawing (mm)

For Flush Diaphragm Seal and Capillary Type Transmitter



### Flange Size: 100mm (4 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	229	24	19	190	1.5	157	8
ANSI Class 300		254	32	22	200			
JIS 10K	89	210	18	19	175	2	157	8
JIS 20K		225	24	23	185			
DIN PN 10/16	89	220	20	18	180	3	157	8
DIN PN 25/40		235	24	22	190			

### Flange Size: 80mm (3 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	190	24	19	152.5	1.5	127	4
ANSI Class 300		210	29	22	168.5			8
JIS 10K	89	185	18	19	150	2	127	8
JIS 20K		200	22	23	160			
DIN PN 10/16	89	200	20	18	160	3	138	8
DIN PN 25/40			24	22				

### Flange Size: 50mm (2 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	61	152	19	19	120.5	1.5	92	4
ANSI Class 300		165	22		127			8
JIS 10K	61	155	16	19	120	2	96	4
JIS 20K			18					8
DIN PN 10/16	61	165	20	18	125	3	102	4
DIN PN 25/40								

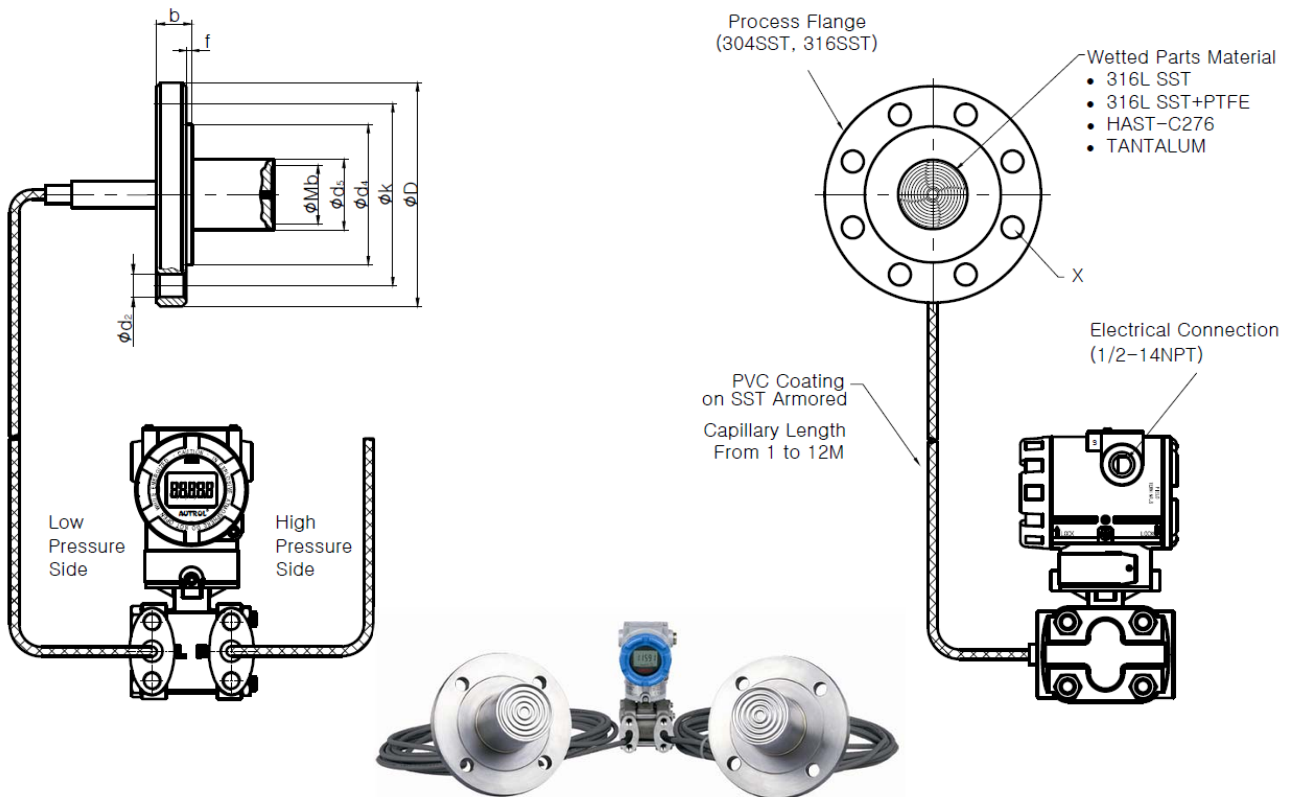
Ordering Information

MODEL NO.	Code	Description					
APT3700N	LFC	Flush Diaphragm Seal and Capillary Type Transmitter (Two Remote Seal)					
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)					
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)					
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)					
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)					
	X	Special					
Mounting Flange Size / Material	S2	ANSI		DIN		JIS	
		2-inch	SST	DN 50	SST	50 A	SST
		3-inch	SST	DN 80	SST	80 A	SST
		4-inch	SST	DN 100	SST	100 A	SST
		Special	SST	Special	SST	Special	SST
Mounting Flange Rating	A1	ANSI		DIN		JIS	
		Class 150	D1	PN 10/16	J1	10 K	
		Class 300	D2	PN 25/40	J2	20 K	
		Special	DX	Special	JX	Special	
Wetted Parts Material Diaphragm / Others	S	DIAPHRAGM			OTHERS		
		316L SST			316L SST		
		316L SST + Teflon			316L SST		
		Hastelloy C-276			316L SST		
		Tantalum			316L SST		
Special			Special				
Fill Fluid	2	FILL FLUID			TEMPERATURE LIMITS		
		D.C Silicone 200			-45 to 205 °C (-49 to 400 °F)		
		D.C Silicone 704			0 to 315 °C ( 32 to 600 °F)		
		Special			Special		
Capillary Length	<input type="checkbox"/>	Capillary Length from 1 to 12m Exp: 01 --> 1m, 10-->10m					
Materials of Construction	SS	FLANGE			VENT / DRAIN VALVE		
		316 SST			316 SST		
Electrical Connection	1	1/2"-14NPT F					
	2	G1/2					
	X	Special					
Nuclear Data	Safety Class		Seismic Category		Quality Class	Environmental Zone	Electric Class
	N (None-Safety)		3		A (T, R) S	O or O1	NE (Non-1E)
Option	M1	LCD Indicator (5-Digit)				LP I	Lighting Protector (Internal)
	BA	SST Bracket (Angle Type) with Bolts & Nuts				K	Oil Free Finish
	BF	SST Bracket (Flat Type) with Bolts & Nuts				ST	Stainless Steel Housing
	A	Vaccum Service				X	Special Order

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*" before order.

## Dimensional Drawing (mm)

For Extended Diaphragm Seal and Capillary Type Transmitter



### Flange Size: 100mm (4 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	89	229	24	19	190	1.5	157	89	8
ANSI Class 300		254	32	22	200				
JIS 10K	89	210	18	19	175	2	157	89	8
JIS 20K		225	24	23	185				
DIN PN 10/16	89	220	20	18	180	3	157	89	8
DIN PN 25/40		235	24	22	190				

### Flange Size: 80mm (3 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	76	190	24	19	152.5	1.5	127	76	4
ANSI Class 300		210	29	22	168.5				8
JIS 10K	76	185	18	19	150	2	127	76	8
JIS 20K		200	22	23	160				
DIN PN 10/16	76	200	20	18	160	3	138	76	8
DIN PN 25/40			24	22					

### Flange Size: 50mm (2 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	48	152	19	19	120.5	1.5	92	48	4
ANSI Class 300		165	22		127				8
JIS 10K	48	155	16	19	120	2	96	48	4
JIS 20K			18						8
DIN PN 10/16	48	165	20	18	125	3	102	48	4
DIN PN 25/40									

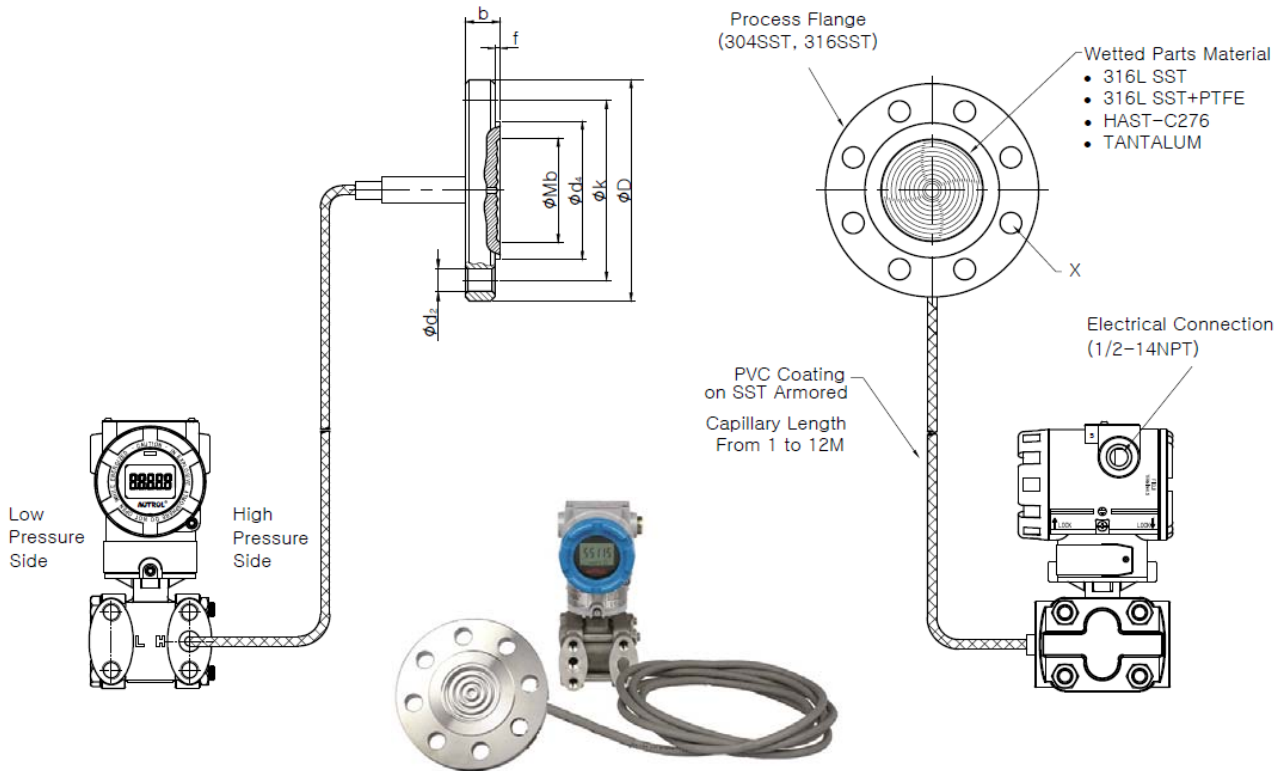
Ordering Information

MODEL NO.	Code	Description					
APT3700N	LEC	Extended Diaphragm Seal and Capillary Type Transmitter (Two Remote Seal)					
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)					
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)					
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)					
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)					
	X	Special					
Mounting Flange Size / Material		ANSI		DIN		JIS	
	S2	2-inch	SST	DN 50	SST	50 A	SST
	S3	3-inch	SST	DN 80	SST	80 A	SST
	S4	4-inch	SST	DN 100	SST	100 A	SST
Mounting Flange Rating		ANSI		DIN		JIS	
	A1	Class 150		D1	PN 10/16	J1	10 K
	A2	Class 300		D2	PN 25/40	J2	20 K
	AX	Special		DX	Special	JX	Special
Extension Length	<input type="checkbox"/>	<input type="checkbox"/> x 10 mm					
	<input type="checkbox"/>	Exp: 15 --> 150mm, 12--> 120mm					
Wetted Parts Material Diaphragm / Others		DIAPHRAGM			OTHERS		
	S	316L SST			316L SST		
	P	316L SST + Teflon			316L SST		
	H	Hastelloy C-276			316L SST		
	X	Special			Special		
Fill Fluid		FILL FLUID			TEMPERATURE LIMITS		
	2	D.C Silicone 200			-45 to 205 °C (-49 to 400 °F)		
	7	D.C Silicone 704			0 to 315 °C ( 32 to 600 °F)		
Capillary Length	<input type="checkbox"/>	Capillary Length from 1 to 12m					
	<input type="checkbox"/>	Exp: 01 --> 1m, 10-->10m					
Materials of Construction	SS	FLANGE			VENT / DRAIN VALVE		
		316 SST			316 SST		
Electrical Connection	1	1/2"-14NPT F					
	2	G1/2					
	X	Special					
Nuclear Data	Safety Class	Seismic Category		Quality Class	Environmental Zone	Electric Class	
	N (None-Safety)	3		A (T, R) S	O or O1	NE (Non-1E)	
Option	M1	LCD Indicator (5-Digit)			LP I	Lighting Protector (Internal)	
	BA	SST Bracket (Angle Type) with Bolts & Nuts			K	Oil Free Finish	
	BF	SST Bracket (Flat Type) with Bolts & Nuts			ST	Stainless Steel Housing	
	A	Vaccum Service			X	Special Order	

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*" before order.

## Dimensional Drawing (mm)

For Flush Diaphragm Seal and Capillary Type Transmitter



### Flange Size: 100mm (4 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	229	24	19	190	1.5	157	8
ANSI Class 300		254	32	22	200			
JIS 10K	89	210	18	19	175	2	157	8
JIS 20K		225	24	23	185			
DIN PN 10/16	89	220	20	18	180	3	157	8
DIN PN 25/40		235	24	22	190			

### Flange Size: 80mm (3 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	89	190	24	19	152.5	1.5	127	4
ANSI Class 300		210	29	22	168.5			8
JIS 10K	89	185	18	19	150	2	127	8
JIS 20K		200	22	23	160			
DIN PN 10/16	89	200	20	18	160	3	138	8
DIN PN 25/40			24	22				

### Flange Size: 50mm (2 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	X
ANSI Class 150	61	152	19	19	120.5	1.5	92	4
ANSI Class 300		165	22		127			8
JIS 10K	61	155	16	19	120	2	96	4
JIS 20K			18					8
DIN PN 10/16	61	165	20	18	125	3	102	4
DIN PN 25/40								

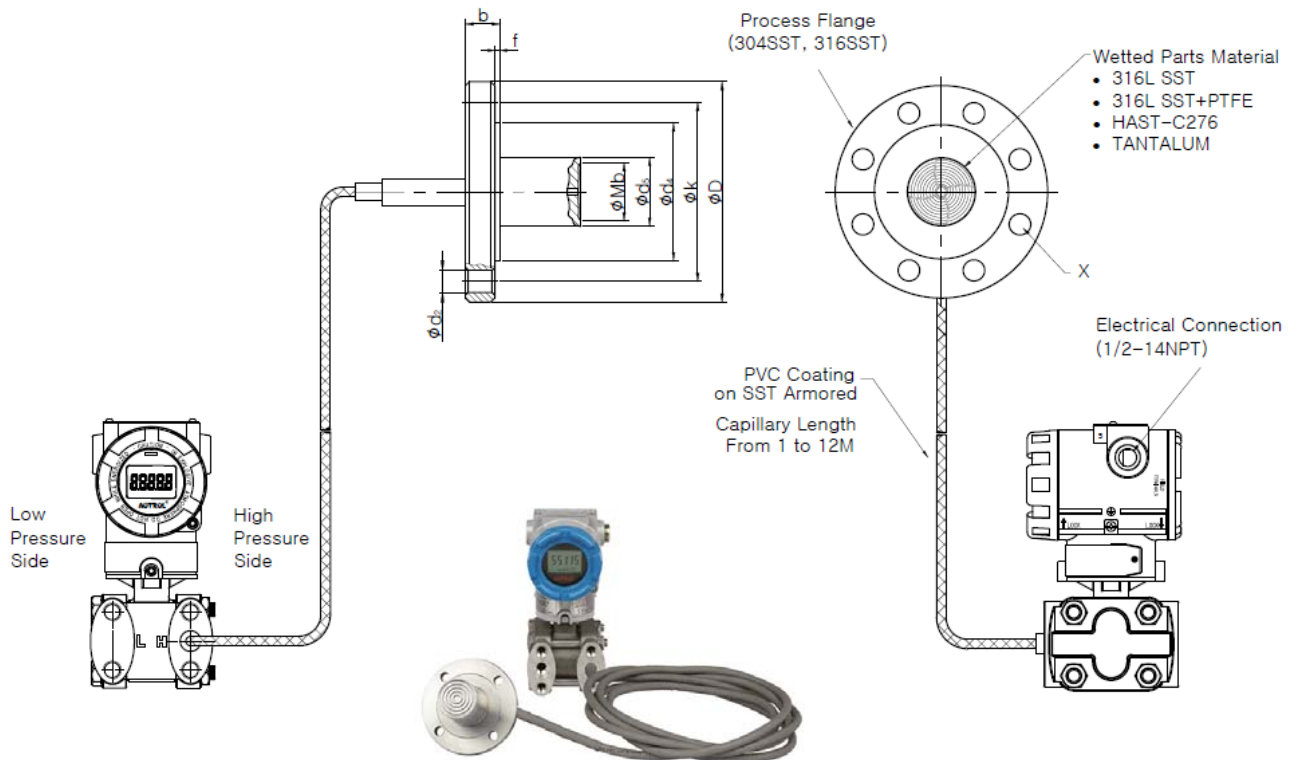
Ordering Information

MODEL NO.	Code	Description					
APT3700N	LFS	Flush Diaphragm Seal and Capillary Type Transmitter (One Remote Seal)					
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)					
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)					
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)					
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)					
	X	Special					
Mounting Flange Size / Material	S2	ANSI		DIN		JIS	
		2-inch	SST	DN 50	SST	50 A	SST
		3-inch	SST	DN 80	SST	80 A	SST
		4-inch	SST	DN 100	SST	100 A	SST
		Special	SST	Special	SST	Special	SST
Mounting Flange Rating	A1	ANSI		DIN		JIS	
		Class 150	D1	PN 10/16	J1	10 K	
		Class 300	D2	PN 25/40	J2	20 K	
		Special	DX	Special	JX	Special	
Wetted Parts Material Diaphragm / Others	S	DIAPHRAGM			OTHERS		
		316L SST	316L SST				
		316L SST + Teflon	316L SST				
		Hastelloy C-276	316L SST				
		Tantalum	316L SST				
X	Special			Special			
Fill Fluid	2	FILL FLUID			TEMPERATURE LIMITS		
		D.C Silicone 200	-45 to 205 °C (-49 to 400 °F)				
		D.C Silicone 704	0 to 315 °C ( 32 to 600 °F)				
		Special	Special				
Capillary Length	□□	Capillary Length from 1 to 12m					
		Exp: 01 --> 1m, 10-->10m					
Materials of Construction	SS	FLANGE			VENT / DRAIN VALVE		
		316 SST			316 SST		
Low Side	W	Without Process Adapter					
		With 1/2"-14 NPT F Process Adapter (316 SST)					
		Closed					
		Special					
Electrical Connection	1	1/2"-14NPT F					
		G1/2					
		Special					
Nuclear Data	N (None-Safety)	Safety Class	Seismic Category	Quality Class	Environmental Zone	Electric Class	
			3	A (T, R) S	O or O1	NE (Non-1E)	
Option	M1	LCD Indicator (5-Digit)				LP I	Lighting Protector (Internal)
		SST Bracket (Angle Type) with Bolts & Nuts				K	Oil Free Finish
		SST Bracket (Flat Type) with Bolts & Nuts				ST	Stainless Steel Housing
		Vaccum Service				X	Special Order

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*" before order.

## Dimensional Drawing (mm)

For Extended Diaphragm Seal and Capillary Type Transmitter



### Flange Size: 100mm (4 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	89	229	24	19	190	1.5	157	89	8
ANSI Class 300		254	32	22	200				
JIS 10K	89	210	18	19	175	2	157	89	8
JIS 20K		225	24	23	185				
DIN PN 10/16	89	220	20	18	180	3	157	89	8
DIN PN 25/40		235	24	22	190				

### Flange Size: 80mm (3 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	76	190	24	19	152.5	1.5	127	76	4
ANSI Class 300		210	29	22	168.5				8
JIS 10K	76	185	18	19	150	2	127	76	8
JIS 20K		200	22	23	160				
DIN PN 10/16	76	200	20	18	160	3	138	76	8
DIN PN 25/40			24	22					

### Flange Size: 50mm (2 inch)

Unit : mm

Flange Rating	Mb	D	b	d2	k	f	d4	d5	X
ANSI Class 150	48	152	19	19	120.5	1.5	92	48	4
ANSI Class 300		165	22		127				8
JIS 10K	48	155	16	19	120	2	96	48	4
JIS 20K			18						8
DIN PN 10/16	48	165	20	18	125	3	102	48	4
DIN PN 25/40									

Ordering Information

MODEL NO.	Code	Description					
APT3700N	LES	Extended Diaphragm Seal and Capillary Type Transmitter (One Remote Seal)					
Ranges	4	0-194 to 0-3800mmH2O (0-1.9 to 0-37.3 KPa)					
	5	0-960 to 0-19000mmH2O (0-9.4 to 0-186.5 KPa)					
	6	0-3518 to 0-70000mmH2O (0-34.5 to 0-690 KPa)					
	7	0-21000 to 0-210000mmH2O (0-103.4 to 0-2068 KPa)					
	X	Special					
Mounting Flange Size / Material		ANSI		DIN		JIS	
	S2	2-inch	SST	DN 50	SST	50 A	SST
	S3	3-inch	SST	DN 80	SST	80 A	SST
	S4	4-inch	SST	DN 100	SST	100 A	SST
	SX	Special	SST	Special	SST	Special	SST
Mounting Flange Rating		ANSI		DIN		JIS	
	A1	Class 150		D1	PN 10/16	J1	10 K
	A2	Class 300		D2	PN 25/40	J2	20 K
	AX	Special		DX	Special	JX	Special
Extension Length	<input type="checkbox"/>	<input type="checkbox"/> x 10 mm					
	<input type="checkbox"/>	Exp: 15 --> 150mm, 12--> 120mm					
Wetted Parts Material Diaphragm / Others		DIAPHRAGM			OTHERS		
	S	316L SST			316L SST		
	P	316L SST + Teflon			316L SST		
	H	Hastelloy C-276			316L SST		
	T	Tantalum			316L SST		
	X	Special			Special		
Fill Fluid		FILL FLUID			TEMPERATURE LIMITS		
	2	D.C Silicone 200			-45 to 205 °C (-49 to 400 °F)		
	7	D.C Silicone 704			0 to 315 °C ( 32 to 600 °F)		
	X	Special			Special		
Capillary Length	<input type="checkbox"/>	Capillary Length from 1 to 12m					
	<input type="checkbox"/>	Exp: 01 --> 1m, 10-->10m					
Materials of Construction		FLANGE			VENT / DRAIN VALVE		
	SS	316 SST			316 SST		
Low Side	W	Without Process Adapter					
	N	With 1/2"-14 NPT F Process Adapter (316 SST)					
	C	Closed					
	X	Special					
Electrical Connection	1	1/2"-14NPT F					
	2	G1/2					
	X	Special					
Nuclear Data		Safety Class	Seismic Category	Quality Class	Environmental Zone	Electric Class	
		N (None-Safety)	3	A (T, R) S	O or O1	NE (Non-1E)	
Option	M1	LCD Indicator (5-Digit)			LP I	Lighting Protector (Internal)	
	BA	SST Bracket (Angle Type) with Bolts & Nuts			K	Oil Free Finish	
	BF	SST Bracket (Flat Type) with Bolts & Nuts			ST	Stainless Steel Housing	
	A	Vaccum Service			X	Special Order	

Note : Request to manufacturer for Draft Range, Absolute (Small Pressure and Vaccum) and items marked "\*" before order.



**Direct Mount Type**

APT3700N-LFD



APT3700N-LED

**Two Remote Capillary Type**

APT3700N-LFC



APT3700N-LEC

**One Remote Capillary Type**

APT3700N-LFS



APT3700N-LES

