



ALDPT SERIES

Pressure Transmitter
Different Pressure Transmitter





ALDPT

Pressure Transmitter
Different Pressure Transmitter
Model ALDPT Series

GENERAL

SmartMeasurement's ALDPT series of pressure transmitters come in a variety of configurations such as differential, gauge, absolute and multivariable. It uses advanced capacitance sensor technology and piezo resistive type for absolute pressure. SmartMeasurement's ALDPT family of pressure transmitters feature self-diagnostics, field parameter adjustment, auto-zero and all industry standard capabilities in an economic package. Installation options includes a wide variety of flanged and thread connections. Outputs can be 4-20 mA with optional HART protocol. SmartMeasurement's ALDPT family of pressure transmitters can be used as standalone or with a variety of flow elements such Vcone, Orifice, Elbow, Venturi, and Wedge.

SPECIFICATIONS

STANDARD SPECIFICATIONS

Wetted Parts Materials

- Isolating Diaphragm Std:SS316L Opt:HC
- Process connection Std:SS304
- Fill fluid Std:Silicone oil
Opt:Fluorinated
- Enclosure: Aluminum with epoxy resin coat
- Housing Gasket: Perbunan (NBR)
- Tag: SS304

PERFORMANCE SPECIFICATIONS

- Pressure Limits:
Vacuum to maximum pressure rate
- Response Time :
Amplifier damping constant:0.1s
Sensor damping constant:0.1~1.6s, (depends on the range and range Compression ratio).
Amplifier damping time constant: 0.1~60 s (adjustable)
Up Time:< 15s
- Ambient Temperature:-40~+85°C
-20~+65° with LCD display or fluorine rubber sealing
- Storage/ship Temperature:-50~+85°
- with LCD display:-40~+85°C

PERFORMANCE SPECIFICATIONS

- Accuracy: $\pm 0.075\%$ (includes terminal-based linearity, hysteresis, and repeatability)
- Accuray: $\pm (0.0075 \times TD)\%$, (TD = URL/SPAN)> 10
- Measure Range: re-set range can be done in SPAN
- Zero Adjustment: zero and span is adjusted to be any point in URL
- Mounting Position Effects:Rotation in diaphragm plane has no effect. Tilting up to 90 degree will cause zero shift up to 0.25 kPa or 0.15Kpa which can be corrected by the zero adjustment

INSTAL LATION

Supply & Load Requirements

- Power supply: 24VDC, $R \leq (U_s - 12V) / I_{max}$ k Ω
 $I_{max} = 23$ mA
- Maximum voltage limited: 42V_{DC}
- Minimum voltage limited: 12V_{DC}
15V_{DC} (with LCD display)
- Digital communication: 230~600 Ω
- Electrical Connection
M20X1.5 via cable entry
Screw terminals are suitable for wire
Cross-sections 0.5~2.5mm²
- Process Connection
Std: 1/2" NPT female thread
Opt: 1/2" NPT female, G1/2" or M20x1.5 male thread
KF16 vacuum interface
- Protection: IP67

WEIGHT

- Pressure transmitt: 1.6kg
- Different pressure transmitter: 3.3kg
- Note: mounting unit, connection unit, remote sensor are not included

- Output: 2 wires, 4~20mA DC, HART
- Output range: $I_{min} = 3.9$ mA, $I_{max} = 20.5$ mA
- Failure Alarm
Low Mode (min):3.7 mA
High Mode (max):21 mA
- No Mode (hold): Keep the effective value before the fault
The standard setting of failure alarm is High Mode

Different Pressure Transmitter

Measuring Range	-40°C~+85°C temperature effects	Static Pressure Effects	Overload effects	Stability
0~0.1~1KPa	$\pm(0.45 \times TD + 0.25)\% \times \text{Span}$	$\pm(0.15\% \text{URL} + 0.10\% \text{Span}) / 4\text{MPa}$	$\pm 0.2\% \times \text{Span} / 4\text{MPa}$	$\pm 0.5\% \times \text{Span} / \text{year}$
0~0.2~6KPa	$\pm(0.30 \times TD + 0.20)\% \times \text{Span}$	$\pm(0.10\% \text{URL} + 0.075\% \text{Span}) / 16\text{MPa}$	$\pm 0.2\% \times \text{Span} / 16\text{MPa}$	$\pm 0.2\% \times \text{Span} / \text{year}$
Others	$\pm(0.20 \times TD + 0.10)\% \times \text{Span}$	$\pm(0.05\% \text{URL} + 0.05\% \text{Span}) / 16\text{MPa}$	$\pm 0.1\% \times \text{Span} / 16\text{MPa}$	$\pm 0.1\% \times \text{Span} / \text{year}$

Pressure Transmitter

Measuring Range	-40°C~+85°C temperature effects	Stability	Note:TD = Max Range ÷ Calibrated Range URL = Calibrated Range Span = Max Range
GP 0~0.6~6KPa	$\pm(0.30 \times TD + 0.20)\% \times \text{Span}$	$\pm 0.2\% \times \text{Span} / \text{year}$	
AP 0~2~40KPa	$\pm(0.30 \times TD + 0.20)\% \times \text{Span}$	$\pm 0.2\% \times \text{Span} / \text{year}$	
Others	$\pm(0.20 \times TD + 0.10)\% \times \text{Span}$	$\pm 0.1\% \times \text{Span} / \text{year}$	

Max Overload:

Pressure transmitter – check selection guide

Different Pressure Transmitter

- One direction overload: up to max static pressure
- Static pressure: 3.5kPa AP to static pressure, broken pressure > static pressure *1.5, for both directions

Over Temperature effects:

$\pm 0.075\% \times \text{Span}$

Power supply effects:

$\pm 0.001\% / 10\text{V} (12 \sim 42\text{VDC})$

EMC:

As below 《EMC Performance Table》

EMC Performance Table

Item	Test Items	Basic standards	Test conditions	Performance Level
1	Radiated interference (Housing)	IEC55022 CISPR 22	30MHz~1000MHz	OK
2	Conducted interference (DC power port)	IEC55022 CISPR 22	0.15MHz~30MHz	OK
3	Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	4kV(line) 8kV(Air)	B
4	RF electromagnetic field immunity	IEC61000-4-3	10V/m (80MHz~1GHz)	A
5	Frequency magnetic field immunity	IEC61000-4-8	30A/m	A
6	Electrical Fast Transient Burst Immunity	IEC61000-4-4	2kV (5/50ns,5kHz)	B
7	Surge Immunity	IEC61000-4-5	1kV (line to line) 2kV (line to ground) (1.2us/50us)	B
8	Conducted interference immunity induced by RF field	IEC61000-4-6	3V (150KHz~80MHz)	A

Note: (1) Performance level A description: The technical specifications within the limits of normal performance.

(2) Performance level B description: Temporary reduction or loss of functionality or performance, it can restore itself. The actual operating conditions, storage, and data will not be changed.

ALDPT SERIES PRESSURE TRANSMITTER



- ALDPT GP - Gauge Pressure Transmitter
- ALDPT AP - Absolute Pressure Transmitter

- Fluid:gas, steam, liquid
- Measuring Range:0 -600pa~40Mpa
- Accuracy:±0.5%, ±0.075%, ±0.1%
- Isolating Diaphragm:316L, HC

-
- ALDPT DP - Different Pressure Transmitter
 - ALDPT LT - DP Level Transmitter

- Fluid:gas, steam, liquid
- Measuring Range:0 -100pa~3Mpa
- Accuracy:±0.5%, ±0.075%, ±0.1%, ±0.25%
- Isolating Diaphragm:316L, HC, Tan, gold plated, FEP coating



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- ALDPT RE - Pressure Transmitter Remote Unit

- Fluid:gas, steam, liquid (suitable for high temperature up to +400°C, high viscosity, high corrosive, or dirty liquid)
- Measuring Range:0 -1000pa~10Mpa
- Accuracy:±0.25%, ±0.1%
- Isolating Diaphragm:316L, HC, Tan, gold plate, FEP/PFA/PTFE coating

-
- ALDPT MV - Multivariable DP/Flow Transmitter

- Fluid:gas, steam, liquid
- Measuring Range:0 -200pa~3Mpa
- Accuracy:±0.075%, ±0.1%
- Isolating Diaphragm:316L, HC, Tan



Pressure Transmitter: ALDPT GP/AP

ALDPT-

Pressure transmitter	GP		
Absolute pressure transmitter	AP		
Measuring range	GP	AP	
0~0.6~6KPa	3	-	
0~2~40KPa	4	4	
0~2.5~250KPa	5	5	
0~30~3000KPa	6	6	
0~0.1~10MPa	7	-	
0~0.21~21MPa	8	-	
0~0.4~40MPa	9	-	
0~0.6~60MPa	0	-	



Output signal

4~20mA DC with keystroke set up	S
Intelligent 4~20mA DC with keystroke and HART	I

Display

No display	M1
LCD display	M3
Backlight LCD display	M4

Construction material

316 SST Isolation diaphragm, Silicon oil	22
Halloy C Isolation diaphragm, Silicon oil	23

Connection

½" NPT female thread - standard	S
½" NPT male thread (¼" NPT to be selected)	N
M20*1.5 male thread	M
G ½" male thread	G
Vacuum connection - DIN 28403 KF16 / ISO 2861	V

Approval

Standard (without explosion proof)	S
NEPES I isolated explosion ExdIIBT5 or ExdIICT6	D

Accuracy

0.2%	2
0.5%	5
0.075% (not for remote)	7

Options


SS Installlation bracket	1
Oxygen final clear (only for fluorinated oil, viton gasket, <6Mpa, +60°C)	0

Pressure Transmitter: ALDPT DP

ALDPT-			
Δ pressure transmitter	DP		
Δ pressure level transmitter	LT		
Measuring range			
0~0.1~1KPa	2		
0~0.2~6KPa	3		
0~0.4~40KPa	4		
0~2.5~250KPa	5		
0~20~2000KPa	6		
Static pressure			
16Mpa	2		
25Mpa	3		
40Mpa	4		
Output signal			
False 4~20mA DC with keystroke and HART	I		
4~20mA DC output is $\sqrt{\Delta P}$ and HART	F		
Display			
No display	M1		
LCD display	M3		
Backlight LCD display	M4		
Construction material			
316 SST Isolation diaphragm, Silicon oil	22		
Halloy C Isolation diaphragm, Silicon oil	23		
Connection			
¼" -18 NPT female thread and 7/16" -20 UNF	No Drain/vent valve	S	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve at the back of flange	B	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve on the top of flange	T	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve under of the flange	U	
Connector gasket (wetting part)			
Perbunan (NBR)		N	
Viton (FKM)		F	
Teflon (PTFE)		P	
Approval			
Standard (without explosion proof)		S	
NEPESI Isolated explosion ExdIIBT5 or ExdIICT6		D	
ATEX Intrinsic safety ExialICT6 or ExibIICT6 (commonly choice)		I	
Accuracy			
0.2%		2	
0.5%		5	
0.075% (not for remote)		7	
Options			
SS Installlation bracket		I	
Oxygen final clear (only for fluorinated oil, viton gasket, <6Mpa, +60?)		O	



Pressure Transmitter Remote Unit: ALDPT RE

ALDPT-RE		
Connection		
DN50 flange	2	
DN80 flange	3	
DN100 flange	4	
Flange Type		
304SS RF type flange ASME B16.5 ANSI 150# (for 2", 3", 4" remote unit)	A	
304SS RF type flange ASME B16.5 ANSI300# (for 2", 3", 4" remote unit)	B	
304SS RF type flange ASME B16.5 ANSI600# (for 2" and 3" remote unit)	C	
304SS E type flange DIN2501 PN 1.0Mpa (for 2" and 3" remote unit)	D	
304SS E type flange DIN2501 PN 4.0Mpa (for 2" and 3" remote unit)	E	
304SS E type flange DIN2501 PN 6.4Mpa (for 2" and 3" remote unit)	F	
304SS E type flange DIN2501 PN 10Mpa (for 2" and 3" remote unit)	G	
Wetted part and diaphragm material		
316L SS	22	
316L SS painted by EFP, up to +180 ^o	32	
316L SS painted by PTFE, up to +200 ^o	42	
316L SS painted by PFA, up to +260 ^o	52	
HC	23	
Tan	24	
Insertion Length		
Flate type, insertion length 0	0	
Insertion type, insertion length 50mm	11	
Insertion type, insertion length 100mm	12	
Insertion type, insertion length 150mm	13	
Fill fluid		
Silicon oil, -30 ~ +200 ^o	S	
Inert liquid, -10 ~ +350 ^o	L	
High temperature inert liquid, -10 ~ +400 ^o	H	
Remote capillary length		
User - selectable	**	
Options		
PVC Sheath for capillary	P1	

Multivariable DP Transmitter: ALDPT MV

ALDPT-			
Multivariable DP Transmitter	MV		
Measuring range			
0~0.2~6KPa	3		
0~0.4~40KPa	4		
0~2.5~250KPa	5		
0~20~2000KPa	6		
Static pressure			
0.25MPa	1		
2MPa	2		
10MPa	3		
40MPa	4		
Output signal			
4~20mA DC with keystroke setup	S		
4~20mA DC with keystroke and RS485	I		
Display			
No display	M1		
LCD display	M3		
Backlight LCD display	M4		
Construction material			
316 SST Isolation diaphragm, Silicon oil	22		
Halloy C Isolation diaphragm, Silicon oil	23		
316 SST Isolation diaphragm, Fluorinated oil	32		
Halloy C Isolation diaphragm, Fluorinated oil	33		
Connection			
¼" -18 NPT female thread and 7/16" -20UNF	No Drain/vent valve	S	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve at the back of flange	B	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve on the top of flange	T	
¼" -18 NPT female thread and 7/16" -20 UNF	Drain/vent valve under of the flange	U	
Connector gasket (wetting part)			
Perbunan (NBR)		N	
Viton (FKM)		F	
Teflon (PTFE)		P	
Approval			
Standard (without explosion proof)		S	
NEPESI Isolated explosion ExdIIBT5 or ExdIICT6		D	
ATEX Intrinsic safety ExialICT6 or ExibIICT6 (commonly choice)		I	
Accuracy			
0.1%		1	
0.075% (not for remote)		7	
Options			
SS Installation bracket		I	
Connection adapter - 304SS oval-shaped flange with ½" NPT female thread		3	
Connection adapter - 304SS D-shaped connector with M20x1.5 male thread		4	
Oxygen final clear (only for fluorinated oil, viton gasket, <6Mpa, +60 ^o)		O	



- View the complete SmartMeasurement product offering, with up-to-date technical data sheets for all pressure transmitter
- Industry-leading technical reference with detailed theory-of-operation articles for every commercially available flow metering technology
- Application notes
- Online calculators for velocity to flow rate, normalized between actual, conductivity

