ALDPT

Pressure & Differential Pressure Transmitter

ALDPT 3051 Series

GENERNAL

The ALDP-3051 is an intelligent differential pressure transmitter that combines proven capacitave sensor measuring techniques (piezoresistive sensors for absolute pressure models) with advanced microprocessor technology. The ALPD-3051 smart pressure transmitter is capable of differential, gage, or absolute pressure measurement. By making use of advanced microprocessor technology, the ALPD-3051 is able to offer features that include self-diagnostics, field parameter adjustment , auto-zeroing, and digital communication capabilities; all for about one half of the price of competitive models. The ALDP-3051 smart pressure transmitter can utilize traditional flanges as well as many other standard industrial process connections for pressure, flow and level applications. Available output options include 4-20mA or 1-5V_{DC} with HART protocol, Profibus, or Foundation fieldbus. The versatility and wide array of options offered by ALPD-3051 smart pressure transmitter make it suitable for almost any application.

FEATURES

- High accuracy, minimal temperature drift (±0.15%FS/10℃)
- 100:1 Turn-down
- Security lock- parameters
- Advanced diagnostic capabilities
- Large measuring range
- Software compensation
- Available in 316SS, Tantalum and other exotic materials
- Available in either Intrinsically Safe ExibIICT6 or Explosion Proof ExdIICT6
- Auto-zero adjustment
- Analog 4～20 mA DC two wire linear output
- HART protocol, Profibus, or foundation fieldbus; PDA option available

SPECIFICATIONS

- Measuring range:
  - Differential: 0～0.16 kPa to 0～10 MPa
  - Absolute: max. 0～25 MPa , min. 0～20 KPa
  - Relative: max 0～40 MPa min 0～0.16 KPa
- Fluids: liquid, gas and steam
- Temperature: –40℃～100℃
  - Drift (zero): 0.5%FS/50℃
  - Drift (span): 0.7%FS/50℃
- Accuracy grades: 0.075 grade, 0.2 grade. 0.5 grade
- Turn-down: 100:1
- Drift (Micro): 0.02%FS/year
- Standard: 0.025%FS/year
- Relative humidity: 0～100% RH
- O ring material: Fluorine rubber, nitrile rubber
- Filled fluid: Silicon oil or inert oil
- Start time: 2 seconds after power up
- Storage temp: -40 ~ 100 °C
- Start time: < 2 s

  Damping time: 2s
- Bolt: stainless steel
- Shell: low copper Alumimium alloy shell
- Approvals: ExdIIBT5 or ExdIICT6

  ExdIIBT5 or ExdIICT6
- Output signal: 4 mA～20 mA_{DC}, two wire
- Working Voltage: (16.4 ～45)V_{DC},

  (16.4 ～30) V_{DC} intrinsic safety type
- Communications distance: 2 km when using CEV cable

  Load capacitance: below 0.22 μF

  Load inductance: below 3.3 mH

  Space with power line: above 15 cm

  Resolution: 0.05% of range
- Field indication: 100% indicating meter, LED, LCD
- Effect of environmental temperature: zero drift: 0.5%FS/50℃

  Range drift: 0.7%FS/50℃
- Effect of supply voltage variation: ±0.005% FS/V
- Protection: IP67
- Weight: 3.5 kg does not include options

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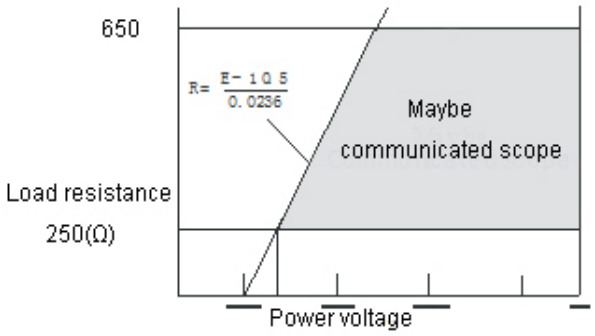
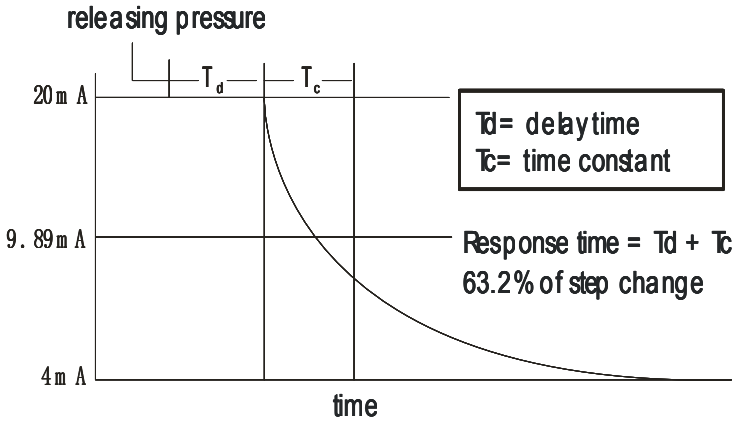
E-mail: sales@smartmeasurement.com

LOAD CHARACTERISTICS

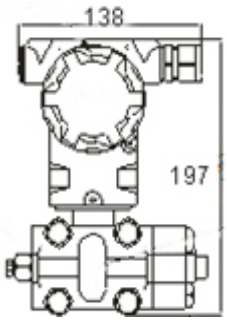


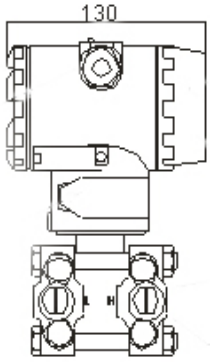
Relationship between supply voltage and load resistance



Typical response time of intelligent transmitter

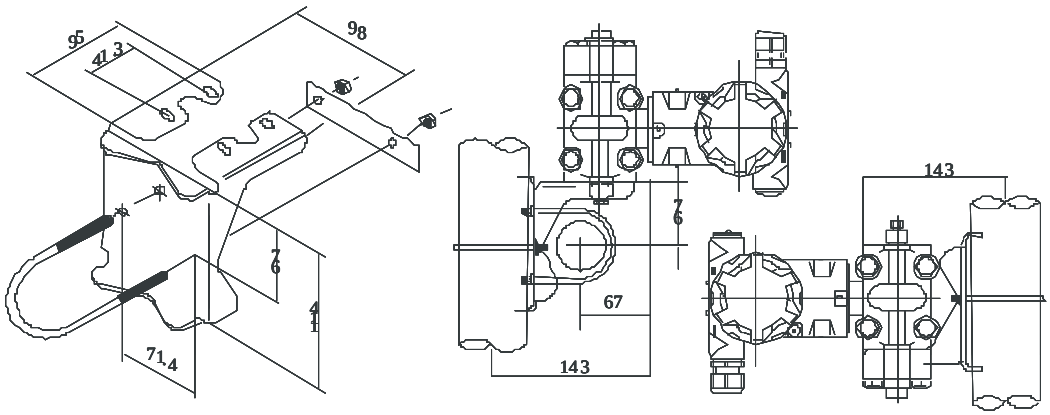
OUTLINE DIMENSION



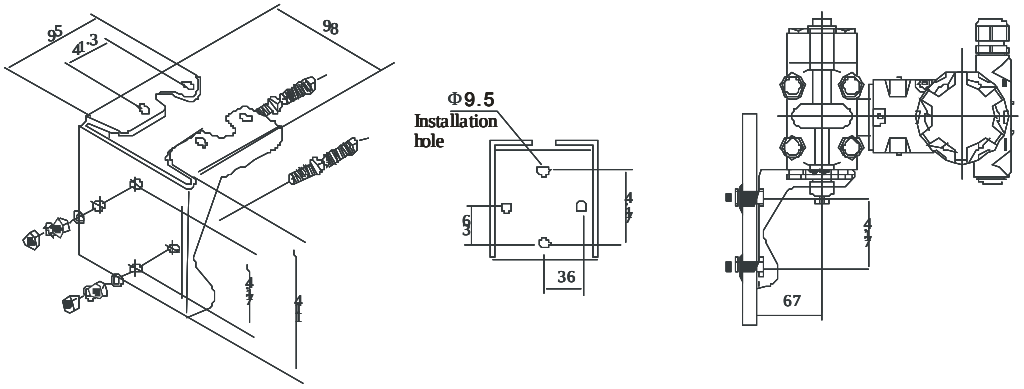


Measuring range (Mpa)	0~0.001 to 0~0.006	0~0.16 to 0~1	0~0.4 to 0~2.5	0~1.6 to 0~10	0~4 to 0~25
	0~0.006 to 0~0.04				
	0~0.04 to 0~0.20				
A(mm)	54	55.2	55.6	57.2	57.6

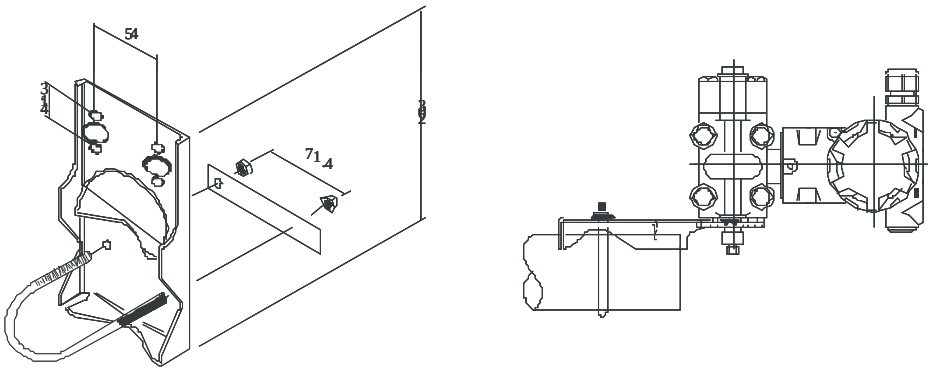
OTHER ACCESSORIES



Pipe-mounting bended support



disk-mounting bended support



Pipe-mounting flat support

**** Please contact your local SMC application engineer**

You also need to provide the following information:

Type of Fluid	**We need the name of your fluid, including operating density and viscosity**
Process Pressure and Temperature	**Working temperater and pressure measure range.**
Type of Electronics	**output and connections**
Pipe Material	**We need the name of your pipe material**

Model Selection Guide - Gauge Pressure Transducer

ALDPT

Example 1: ALDPT-BGP-3-E-12-M1-B1-S-5

ALDPT-	**-	**-	**-	**-	**-	**-	**-	**-	**	Description
pressure transmitter	-BGP									Function
intelligent pressure transmitter	-BAGP									
0~1~6KPa		3								Measuring Range
0~6~40KPa		4								
0~40~200KPa		5								
0~160~1000KPa		6								
0~0.4~2.5MPa		7								
0~1.6~10MPa		8								
0~4~25MPa		9								
0~6~40MPa		0								
General analog type (4～20)mA_{DC} with adjustable damping			E							Output
Standard data type(4～20)mA_{DC} with keystroke set up			S							
Standard intelligent(4～20)mA_{DC} with keystroke and HART protocol)			I							
Flanged joint	**Drain/vent valve**	**Isolation diaphragm**								Construction material
Carbon steel cadmium plated	316 Stainless Steel	316 Stainless Steel	12							
316 SST	316 Stainless Steel	316 Stainless Steel	22							
316 SST	316 Stainless Steel	Hastalloy C®	23							
linear indicator (0～100% scale)				M1						Display
LCD digital range display				M3						
LED digital range display				M4						
0～100% of range LCD digital display				M5						
0～100% of range LED digital display				M6						
LCD digital range display with back light				M7						
LCD digital range display without back light				M8						
90° bracket for pipe installation (2” pipe)					B1					Install Options
90° bracket for panel installation					B2					
side drain/vent valve on top of flange					D1					
side drain/vent valve under the flange					D2					
¼-18 NPTF female pipe thread					P					
“J” type joint: positive thread of m20×1.5 and back welded lead-pressure pipe (ss)					J					
N-type joint: ½-14 NPTF female pipe thread					N					
½-14 NPTF lead pressure transition joint and back welded lead pressure pipe (ss)					C12					
Standard (w/o explosion proof)						S				Explosion
Isolated explosion-proof ExdIIBT5 or ExdIICT6						D				
Intrinsically safe ExiaIICT6 or ExibIICT6 (commonly choice)						I				
0.20%							2			Accuracy
0.50%							5			
0.075%(Intellgent option）							7			
Special requirement								**		Options

Model Selection Guide - Absolute Pressure Transmitter

ALDPT										
Example 1: ALDPT-BAP-4-E-12-M1-B1-S-5										
ALDPT-	**-	**-	**-	**-	**-	**-	**-	**-	**	Description
absolute pressure transmitter	-BAP									Function
intelligent absolute pressure transmitter	-BAAP									
0~6~40KPa		4								Measuring Range
0~40~200KPa		5								
0~160~1000KPa		6								
0~0.4~2.5MPa		7								
0~1.6~10MPa		8								
General analog type (4～20)mA_{DC} with adjustable damping			E							Output
Standard data type(4～20)mA_{DC} with keystroke set up			S							
Standard intelligent(4～20)mA_{DC} with keystroke and HART protocol)			I							
Flanged joint	**Drain/vent valve**	**Isolation diaphragm**								Construction material
Carbon steel cadmium plated	316 Stainless Steel	316 Stainless Steel	12							
Carbon steel cadmium plated	Hastalloy C®	Hastalloy C®	13							
Carbon steel cadmium plated	Monel® steel	Monel® steel	14							
Carbon steel cadmium plated	316 Stainless Steel	Tantalum	15							
316 SST	316 Stainless Steel	316 Stainless Steel	22							
316 SST	316 Stainless Steel	Hastalloy C®	23							
316 SST	316 Stainless Steel	Monel® steel	24							
316 SST	316 Stainless Steel	Tantalum	25							
Halloy C	Hastalloy C®	Hastalloy C®	33							
Halloy C	Hastalloy C®	Tantalum	35							
Monel metal	Monel® steel	Monel® steel	44							
linear indicator (0～100% scale)				M1						Display
LCD digital range display				M3						
LED digital range display				M4						
0～100% of range LCD digital display				M5						
0～100% of range LED digital display				M6						
LCD digital range display with back light				M7						
LCD digital range display without back light				M8						
90° bracket for pipe installation (2” pipe)					B1					Install Options
90° bracket for panel installation					B2					
Flat bracket for pipe installation (2”pipe)					B3					
Drain/vent valve at the face of flanged back					D0					
side drain/vent valve on top of flange					D1					
side drain/vent valve under the flange					D2					
¼-18 NPTF female pipe thread					P					
“J” type joint: positive thread of m20×1.5 and back welded lead-pressure pipe (ss)					J					
N-type joint: ½-14 NPTF female pipe thread					N					
½-14 NPTF lead pressure transition joint and back welded lead pressure pipe (ss)					C12					
Standard (w/o explosion proof)						S				Explosion
Isolated explosion-proof ExdIIBT5 or ExdIICT6						D				
Intrinsically safe ExiaIICT6 or ExibIICT6 (commonly choice)						I				
0.20%							2			Accuracy
0.50%							5			
0.075%(Intellgent option）							7			
Special requirement								**		Options

Model Selection Guide - Micro Differential Pressure Transducer

ALDPT										
Example 1: ALDPT-BDR-2A-E-12-M1-B1-S-5										
ALDPT-	**-	**-	**-	**-	**-	**-	**-	**-	**	Description
micro △ pressure transmitter	-BDR									Function
intelligent micro Δ pressure transmitter	-BADR									
0~0.16~1.0KPa Static pressure: 1MPa		2A								Measuring Range
0~0.16~1.0KPa Static pressure: 2.5MPa		2B								
0~0.16~1.0KPa Static pressure: 4MPa		2C								
General analog type (4～20)mA$_{DC}$ with adjustable damping			E							Output
Standard data type(4～20)mA$_{DC}$ with keystroke set up			S							
Standard intelligent(4～20)mA$_{DC}$ with keystroke and HART protocol)			I							
Standard intelligent (4～20mA$_{DC}$ output is $\sqrt{\Delta P}$ with adjustable damping)			J							
Flanged joint	**Drain/vent valve**	**Isolation diaphragm**								Construction material
Carbon steel cadmium plated	316 Stainless Steel	316 Stainless Steel	12							
Carbon steel cadmium plated	Hastalloy C®	Hastalloy C®	13							
Carbon steel cadmium plated	Monel® steel	Monel® steel	14							
Carbon steel cadmium plated	316 Stainless Steel	Tantalum	15							
316 SST	316 Stainless Steel	316 Stainless Steel	22							
316 SST	316 Stainless Steel	Hastalloy C®	23							
316 SST	316 Stainless Steel	Monel metal	24							
316 SST	316 Stainless Steel	Tantalum	25							
Halloy C	Hastalloy C®	Hastalloy C®	33							
Halloy C	Hastalloy C®	Tantalum	35							
Monel metal	Monel® steel	Monel® steel	44							
linear indicator (0～100% scale)				M1						Display
LCD digital range display (liquid crystal)				M3						
LED digital range display (numeral tube)				M4						
0～100% of range LCD digital display				M5						
0～100% of range LED digital display				M6						
LCD digital range display with back light				M7						
LCD digital range display without back light				M8						
90° bracket for pipe installation (2" pipe)					B1					Install Options
90° bracket for panel installation					B2					
Flat bracket for pipe installation (2"pipe)					B3					
Drain/vent valve at the face of flanged back					D0					
side drain/vent valve on top of flange					D1					
side drain/vent valve under the flange					D2					
¼-18 NPTF female pipe thread					P					
"J" type joint: positive thread of m20×1.5 and back welded lead-pressure pipe (ss)					J					
N-type joint: ½-14 NPTF female pipe thread					N					
½-14 NPTF lead pressure transition joint and back welded lead pressure pipe (ss)					C12					
Standard (w/o explosion proof)						S				Explosion
Isolated explosion-proof ExdIIBT5 or ExdIICT6						D				
Intrinsically safe ExiaIICT6 or ExibIICT6 (commonly choice)						I				
0.20%							2			Accuracy
0.50%							5			
0.075%(Intellgent option)							7			
Special requirement								**		Options

Model Selection Guide - Medium & High Differential Pressure Transmitter

ALDPT										
Example 1: ALDPT-BDP-3D-E-12-M1-B1-S-5										
ALDPT-	**-	**-	**-	**-	**-	**-	**-	**-	**	Description
low, medium and high Δpressure transmitter	-BDP									Function
low, medium and high Δpressure transmitter	-BADP									
0~1~6KPa Static pressure: 4MPa		3D								Measuring Range
0~6~40KPa Static pressure: 10MPa		4D								
0~40~200KPa Static pressure: 10MPa		5D								
0~160~1000KPa Static pressure: 10MPa		6D								
0~0.4~2.5MPa Static pressure: 10MPa		7D								
0~1.6~10MPa Static pressure: 10MPa		8D								
General analog type (4～20)mA$_{DC}$ with adjustable damping			E							Output
Standard data type(4～20)mA$_{DC}$ with keystroke set up			S							
Standard intelligent(4～20)mA$_{DC}$ with keystroke and HART protocol)			I							
Standard intelligent (4～20mA$_{DC}$ output is $\sqrt{\Delta P}$ with adjustable damping)			J							
Flanged joint	**Drain/vent valve**	**Isolation diaphragm**								Construction material
Carbon steel cadmium plated	316 Stainless Steel	316 Stainless Steel	12							
Carbon steel cadmium plated	Hastalloy C®	Hastalloy C®	13							
Carbon steel cadmium plated	Monel® steel	Monel® steel	14							
Carbon steel cadmium plated	316 Stainless Steel	Tantalum	15							
316 SST	316 Stainless Steel	316 Stainless Steel	22							
316 SST	316 Stainless Steel	Hastalloy C®	23							
316 SST	316 Stainless Steel	Monel® steel	24							
316 SST	316 Stainless Steel	Tantalum	25							
Halloy C	Hastalloy C®	Hastalloy C®	33							
Halloy C	Hastalloy C®	Tantalum	35							
Monel metal	Monel® steel	Monel® steel	44							
linear indicator (0～100% scale)				M1						Display
LCD digital range display (liquid crystal)				M3						
LED digital range display (numeral tube)				M4						
0～100% of range LCD digital display				M5						
0～100% of range LED digital display				M6						
LCD digital range display with back light				M7						
LCD digital range display without back light				M8						
90° bracket for pipe installation (2” pipe)					B1					Install Options
90° bracket for panel installation					B2					
Flat bracket for pipe installation (2”pipe)					B3					
Drain/vent valve at the face of flanged back					D0					
side drain/vent valve on the top of flange					D1					
side drain/vent valve under of the flange					D2					
N-type joint: ½-14 NPTF female pipe thread					N					
½-14 NPTF lead pressure transition joint and back welded lead pressure pipe (ss)					C12					
Standard (without explosion proof)						S				Explosion
Isolated explosion-proof ExdIIBT5 or ExdIICT6						D				
Intrinsically safe ExiaIICT6 or ExibIICT6 (commonly choice)						I				
0.20%							2			Accuracy
0.50%							5			
0.075%(Intellgent option）							7			
Special requirement								**		Options

Model Selection Guide - High Pressure Differential Pressure Transmitter

ALDPT										
Example 1: ALDPT-BHP-3A-E-12-M1-B1-S-5										
ALDPT-	**-	**-	**-	**-	**-	**-	**-	**-	**	Description
high static pressure Δpressure transmitter	-BHP									Function
Intelligent high static pressure Δpressure transmitter	-BAHP									
0~1~6KPa Static pressure: 10MPa		3A								Measuring Range
0~6~40KPa Static pressure: 25MPa		4A								
0~40~200KPa Static pressure: 25MPa		5A								
0~160~1MPa Static pressure: 25MPa		6A								
0~0.4~2.5MPa Static pressure: 25MPa		7A								
0~6~40.0KPa Static pressure: 32MPa		4B								
0~40~200KPa Static pressure: 32MPa		5B								
General analog type (4～20)mA_{DC} with adjustable damping			E							Output
Standard data type(4～20)mA_{DC} with keystroke set up			S							
Standard intelligent(4～20)mA_{DC} with keystroke and HART protocol)			I							
Standard intelligent (4～20mA_{DC} output is $\sqrt{\Delta P}$ with adjustable damping)			J							
Flanged joint	**Drain/vent valve**	**Isolation diaphragm**								Construction material
Carbon steel cadmium plated	316 Stainless Steel	316 Stainless Steel	12							
Carbon steel cadmium plated	Hastalloy C®	Hastalloy C®	13							
Carbon steel cadmium plated	Monel® steel	Monel® steel	14							
Carbon steel cadmium plated	316 Stainless Steel	Tantalum	15							
316 SST	316 Stainless Steel	316 Stainless Steel	22							
316 SST	316 Stainless Steel	Halloy C	23							
316 SST	316 Stainless Steel	Monel® steel	24							
316 SST	316 Stainless Steel	Tantalum	25							
Halloy C	Hastalloy C®	Hastalloy C®	33							
Halloy C	Hastalloy C®	Tantalum	35							
Monel metal	Monel® steel	Monel® steel	44							
linear indicator (0～100% scale)				M1						Display
LCD digital range display (liquid crystal)				M3						
LED digital range display (numeral tube)				M4						
0～100% of range LCD digital display				M5						
0～100% of range LED digital display				M6						
LCD digital range display with back light				M7						
LCD digital range display without back light				M8						
90° bracket for pipe installation (2” pipe)					B1					Install Options
90° bracket for panel installation					B2					
Flat bracket for pipe installation (2”pipe)					B3					
Drain/vent valve at the face of flanged back					D0					
“J” type joint: positive thread of m20×1.5 and back welded lead-pressure pipe (ss)					J					
N-type joint: ½-14 NPTF female pipe thread					N					
½-14 NPTF lead pressure transition joint and back welded lead pressure pipe (ss)					C12					
Standard (w/o explosion proof)						S				Explosion
Isolated explosion-proof ExdIIBT5 or ExdIICT6						D				
Intrinsically safe ExiaIICT6 or ExibIICT6 (commonly choice)						I				
0.20%							2			Accuracy
0.50%							5			
0.075%(Intellgent option）							7			
Special requirement								**		Options