



# DIFFERENTIAL PRESSURE TRANSMITTERS

## “All Stainless Steel”

### Series DP-4000



- ▶ *STAINLESS STEEL HOUSING*
- ▶ *EASY ADJUSTABLE WITHOUT TESTPRESSURE BY 1 BUTTON*
- ▶ *ACCURACY: 0.075%  
OPTION: 0.065%*
- ▶ *TURN DOWN UP TO: 100:1*
- ▶ *GRAPHIC DISPLAY WITH BARGRAPH AND BACKLIGHT*
- ▶ *HART® PROTOCOL (HART® 7)*
- ▶ *DEVELOPMENT ACCORDING TO SIL2*
- ▶ *DIAPHRAGM SEALS AVAILABLE*



## Description

The DP-4000 is a high-performance differential pressure transmitter with a compact and robust **Stainless steel electronics housing**. The calibration / programming can be done very easy without testpressure by using the **Unique One Touch programming button** together with the **Graphic display with backlight**. The multilingual graphic display can indicate a number of chosen engineering units including the process temperature as well as the mA output in a bargraph. Damping times can be adjusted and a 4-20 mA current simulation can be performed. For flow measurement a square root function is built-in with adjustable cut off point. The output is 4-20 mA including HART® protocol (HART® 7.0). ATEX II1G Ex ia IIC T6 Ga and IECEx approvals are available.



*Stainless steel electronics housing*

HART® is a registered trademark of the HART Communication Foundation.

*Manufactured by:*

**KLAY-INSTRUMENTS B.V.**

# Series DP-4000

## Specifications

Accuracy	: 0.075% (option: 0.065%)
Ranges	: 0-10 mbar to 0 – 20 bar
Turn down	: up to 100:1
<b>Adjustment</b>	<b>: by One pushbutton and local display, without testpressure</b>
Output	: 4-20 mA + HART® Protocol (version 5.0 and 7.0)
Supply	: 12 – 36 Vdc
<b>Electronics housing</b>	<b>: AISI 304 (Option: AISI 316)</b>
Protection	: IP66/67 (option IP68)
Process temperature	: -20°C to 80°C (option: 100°C)
Ambiant temperature	: -20°C to 70°C
Material wetted parts	: AISI 316L (option: Hastelloy C)
Material diaphragm	: AISI 316L (option: Hastelloy C, Tantalum or Gold plated)
Material sensor gasket	: Viton/FKM (standard), PTFE or NBR
Process connection	: 1/4 - 18 NPT female
Option	: ½" NPTf (by oval flanges)

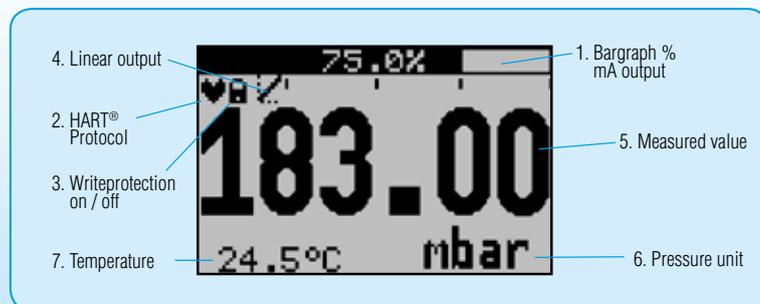
## Adjustable points

P101	Zero adjustment (ZERO / 4 mA)
P102	Span adjustment (SPAN / 20 mA)
P103	Cancel mounting position effect
P104	Adjustment pressure unit
P105	Output 4-20 mA* or 20-4 mA
P106	Damping adjustment (0 - 25 sec.)
P107	Language: English*, Dutch, German, French, Russian or Polish
P108	Safety adjustment, Alarm and backlight
P109	Read out on display: Current, pressure unit, temp. or %.
P110	Current simulation (4-20 mA)
P111	Linearisation (various tankshapes)
P112	Burst mode (with option HART®)
P113	Instrument information
P114	Flow / Square root

\* = Factory setting

## Graphic display with bargraph and backlight

**Multilingual:** English, Dutch, German, French, Spanish, Russian and Polish



## Unique 'One Touch Programming Button'

The series DP-4000 is carried out with a **unique control button**.

This 'single button' can be used for all programming / calibration functions.

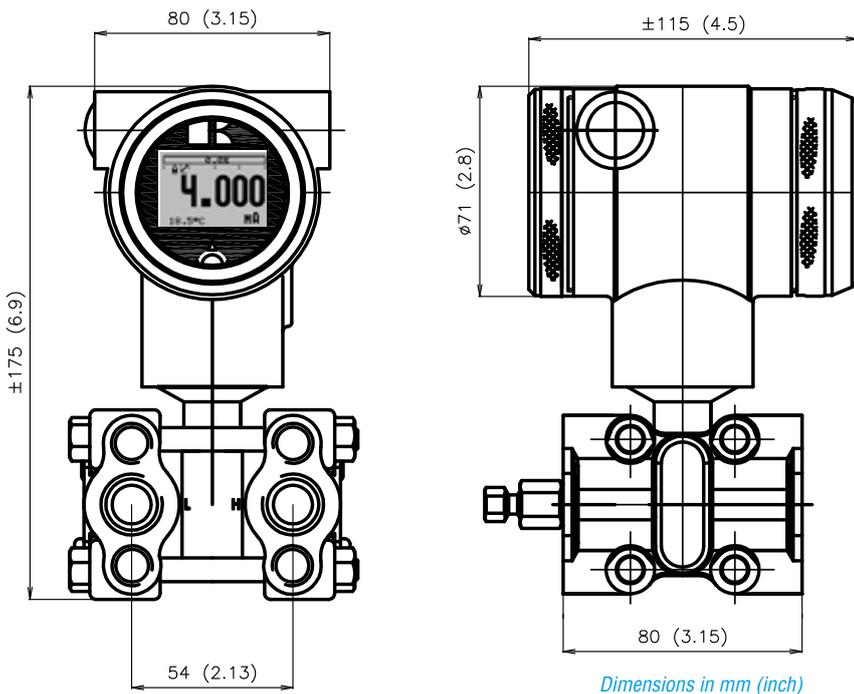


360° Revolving display

**With unique OneTouch Programming Button**



# Series DP-4000



Dimensions in mm (inch)



Wetted parts AISI 316L  
Including vent valves.

## Separate electronics housing:

Series DP-4000 is also available in a separate version.

Type: DP-4000-Cable(...m)-range-...

Always specify the cable length, range etc.

## DP-Level Measurement in closed tanks:

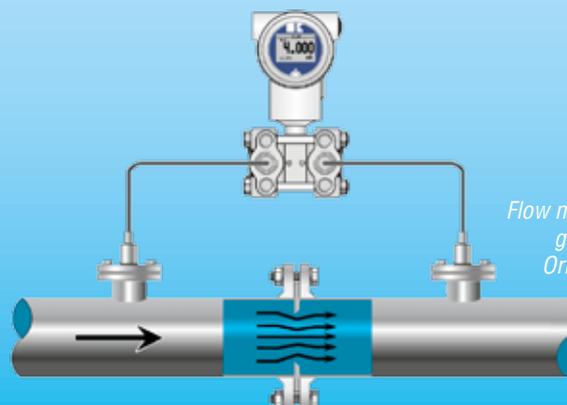
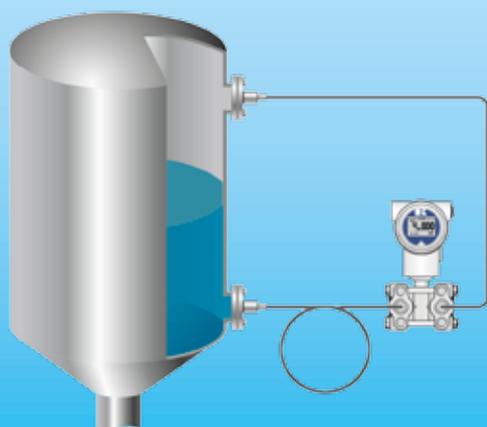
For DP level measurement in closed pressurized tanks a DP-4000 with separate diaphragm seals is available.

**A tank linearization can be programmed very easy.**

The standard tank shapes are:

- Horizontal tank with flat end or parabolic end
- Vertical tank with a spherical bottom or conical bottom

*\*For level measurement in open (non-pressurized) tanks please use other Klay Level transmitters, i.e. Series 8000-SAN (0.2%), series 2000-SAN (0.1%) or series 4000-SAN (0.075%).*



Flow measurement of liquids, gasses or steam with an Orifice plate or Pitot tube.  $\sqrt{\text{SQUARE ROOT}}$



DP-4000 with oval flanges (option)

# Ordering codes Series DP-4000

Series DP-4000				Ordering code: DP-4000-													
<b>ACCURACY CLASS:</b>				↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
0,075 % (standard)				S													
0,065 %				H													
<b>RANGE:</b>	<b>TD</b>	<b>MIN SPAN:</b>	<b>MAX SPAN:</b>														
60 mbar	6:1	10 mbar	60 mbar	A													
400 mbar	40:1	10 mbar	400 mbar	B													
2.0 bar	100:1	20 mbar	2000 mbar	C													
20 bar	100:1	0,2 bar	20 bar	D													
<b>STATIC PRESSURE (MAX.):</b>																	
160 bar (standard)				S													
250 bar (only for range B, C and D)				H													
<b>DIAPHRAGM MATERIAL / BODY MATERIAL:</b>																	
AISI 316 L (standard)		AISI 316L		S													
Hastelloy C 276		AISI 316L		H													
Tantalum		AISI 316L		T													
Gold plated on SST 316L		AISI 316L		G													
<b>FILL FLUID DIAPHRAGM</b>																	
Silicone oil (standard)				S													
Fluorinated oil				F													
<b>GASKET (PROCESS / DIAPHRAGM)</b>																	
Viton (FKM) (standard)				V													
Teflon (PTFE)				T													
NBR				N													
<b>PROCESS CONNECTION / OVAL FLANGE CONNECTION / VENTING</b>																	
1/4 - 18 NPT female	7/16-20 UNF	Incl. vent valves at flange end		S													
<b>ELECTRICAL CONNECTION / CABLE ENTRY</b>																	
M20 x 1.5 female thread (standard)				S													
1/2"NPT female thread				N													
PG 11				P													
<b>APPROVALS</b>																	
None				S													
Intrinsically safe ATEX II1G Ex ia IIC T4 Ga (Option: T5 – T6) and IECEx				Ex													
<b>OPTIONS</b>																	
Transparent cover, display functions as local indicator				I													
Degreasing (Silicone oil)				D													
Oxygen cleaning (Fluorinated oil) FKM gasket				Ox													
Electronics housing material AISI 316 (Standard is AISI 304)				G9													
PROFIBUS-PA output (Not available in Ex)				P													

**Ordercode standard Model: DP-4000-S-C-S-S-S-V-S-S-S**

### ACCESSORIES:

- Mounting bracket (AISI 304)
- Oval Flanges (AISI 316L) to get 1/2" NPTf process connection.
- Bolts / nuts in AISI 316 (Standard is AISI 304)
- 3 way manifold (AISI 316L) Type: M3G
- 5 way manifold (AISI 316L) Type: M5G

