



# UIB3351 Metal Capacitive Pressure/Differential Pressure Transmitters

## 1. Description

**UIB3351 series intelligent pressure transmitters** are suitable for the measurement of flow, level and pressure (differential pressure, gauge pressure and absolute pressure), this product has strong adaptability and high reliability, and also has good anti-interference ability and zero stability. Its accuracy reaches 0.1%FS. 3351 can be made with HART Protocol communication, can be communicated with many hand-held communicator like HK-375 & Rosemount 275 etc.

UIB3351 intelligent pressure transmitter is composed of pressure sensor and PCB. The pressure sensor includes sensing element, EEPROM and other parts; PCB includes micro processor, digital/analogue converter, digital communication and memory EEPROM etc, to complete the conversion from pressure signal to 4~20mA DC signal.

**UIB3351 series intelligent pressure transmitter includes 8 types:**

- UIB3351DP differential pressure transmitter
- UIB3351HDP high system differential pressure transmitter
- UIB3351GP gauge pressure transmitter
- UIB3351AP absolute pressure transmitter
- UIB3351DP flow transmitter
- UIB3351LT level transmitter
- UIB3351GP remote pressure transmitter
- UIB3351DP remote differential pressure transmitter



## 2. Features

- adopting microprocessor to improve its flexibility and functions
- have strong self-diagnostic capability
- wide ranges from 0~100Pa to 42MPa
- accuracy better than 0.1%FS or 0.2%FS, rangeability 15:1
- Zero and span adjustment without mutual influence
- have perfect remote setting, local setting as well as adjustment function
- 2-wire system, Hart Protocol
- use digital compensation technology to compensate for temperature and system pressure error
- good stability, high accuracy, adjustable damping, strong unidirectional overload capacity
- no mechanical transmission parts, little repair work, strong vibration resistance
- all general parts, convenient maintenance
- optional of diaphragm material (contact medium), explosion-proof
- super performance and reliability



# UIB3351 Metal Capacitive Pressure/Differential Pressure Transmitters

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## 3. Specifications

**Application:** measurement of gas, liquid or steam.

**Pressure range:** 0~0.1kPa...40MPa

**Accuracy:** 0.1%FS,0.2%FS

**Output:** 2-wire 4~20mA, and superimposes digital process variable signal which conforms to HART Protocol

**Rangeability:** 15:1

**Power supply:** 12~45V DC, standard 24VDC

**Load resistance:** the max. allowed load resistance on circuit is determined by power supply;  
for HART,  $250\Omega \leq \text{load resistance} \leq 1100\Omega$

**Indicator:** 0~100 linear meter or digital indicator

**Stability:** not exceed the basic error absolute value of the max. range within 12 months

**Temperature effect:**  $< 0.03\%FS/10^\circ C$  for GP DP transmitter

**System pressure effect:**  $\pm 0.25\%FS/10MPa$  for DP type (can be revised in pipeline pressure);  
 $\pm 0.2\%FS/32MPa$  for HP type, (can be revised in pipeline pressure)

**Power supply effect:** NA

**EMI / RFI interference effect:** 20~1000MHz, output drift less than 0.01%FS if field intensity reach 30V/m

**Influence of vibration:** in arbitrary axis,  $0.05\%FS/g @ 100HZ$

**Mounting position effect:** max. 0.24kPa. When liquid membrane is mounted horizontally, zero drift at most 1.25kPa. Zero drift can be modified and without any influence for range.

**Influence of load:** in the power supply range, no load effect

**Temperature range:** 1. ambient temperature:  $-40 \sim +85^\circ C$ ,  $-20^\circ C \sim +65$  (for indicator)  
2. medium temperature range:  $-40 \sim +120^\circ C$   
3. storage temperature range:  $-40 \sim +105^\circ C$

**Relative humidity:** 0~100%RH

**Weight:** 3.5kg ( standard configuration without mounting kits,height: 190mm )  
electrical connection: M20x1.5 or NPT1/2

**Process Connection:** 1. 1/4NPT Female  
2. connector

**Diaphragm material:** 316L, hastelloy-C276, or monel

**Vent/drain value:** 316L, hastello-C276, or monel

**O-ring materials:** nitrile rubber, fluorine rubber, Teflon, metal sealing ring

**Electronic shell and coating:** low copper alloy, anodic oxidation, spraying polyurethane

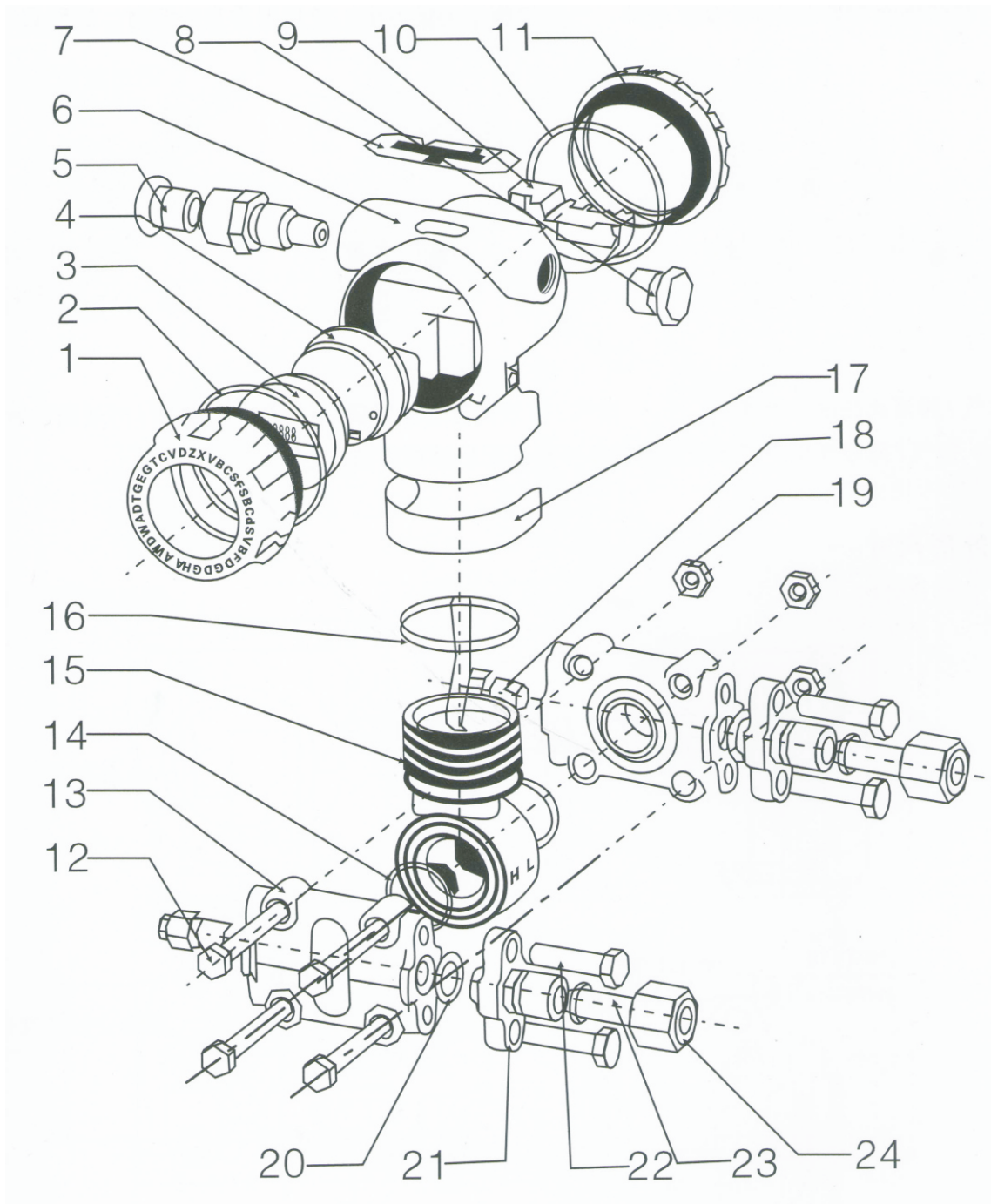
**Sensor filling liquid:** silicone, fluorosilicone oil

**Meter cover and display box:** 10mm toughened glass, nitrile rubber seal

**Protection:** IP67

**Explosion-proof:** intrinsic safety: Exia II Ct6;  
flame proof: Exd II CT6

## 4. Exploded View



- |                               |                              |                         |                        |
|-------------------------------|------------------------------|-------------------------|------------------------|
| 1. front cover                | 2. front cover O-ring        | 3. display head         | 4. electronics board   |
| 5. electrical connection plug | 6. electronics housing       | 7. name plate 1         | 8. sealing plug        |
| 9. terminal                   | 10. back cover O-ring        | 11. back cover          | 12. bolts              |
| 13. flange block              | 14. diaphragm capsule O-ring | 15. diaphragm capsule   | 16. sensor head O-ring |
| 17. name plate 2              | 18. drain/vent valve         | 19. nut                 | 20. process O-ring     |
| 21. T type connector base     | 22. bolts                    | 23. welded process pipe | 24. locking nut        |

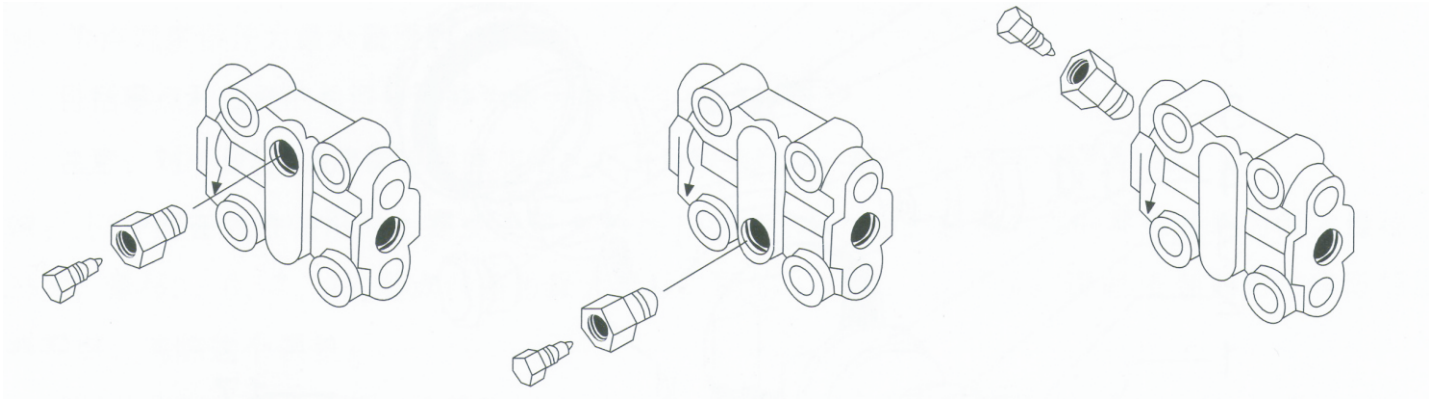


# UIB3351 Metal Capacitive Pressure/Differential Pressure Transmitters

## Drain/Vent Valve Location

Ordering code D1: drain/vent valve is located on side top of flange. For liquid process application, if the transmitter is installed vertically, the top valve is used to exhaust the gas in the liquid..

Order code D2: drain/vent valve is located on side bottom of flange. For gas process application, if the transmitter is installed vertically, the top valve is used to exhaust the liquid in gas.



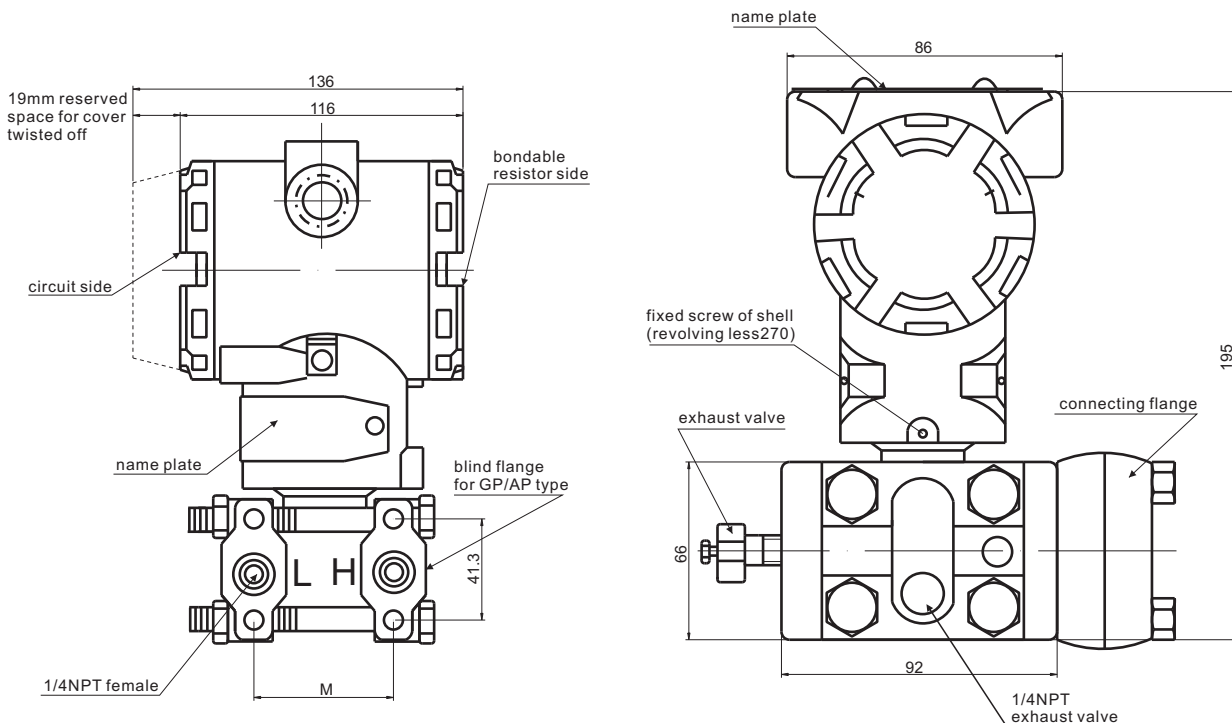
D1: drain/vent valve on top of flange

D2: drain/vent valve on bottom of flange

D0: drain/vent valve on back of flange

**Note:** if there is no remark when ordering, we will supply D0.

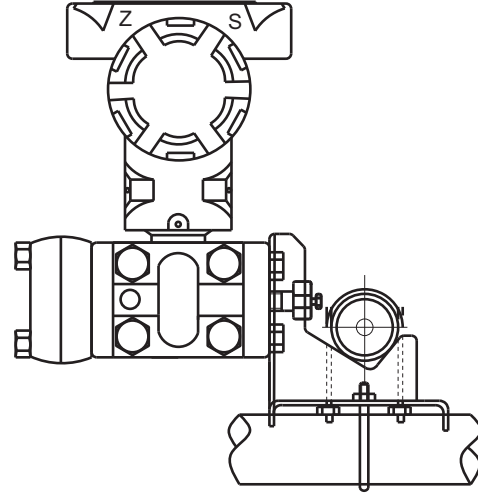
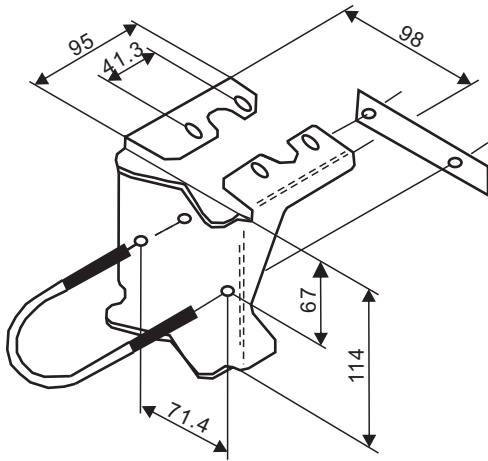
## 5. Dimensions



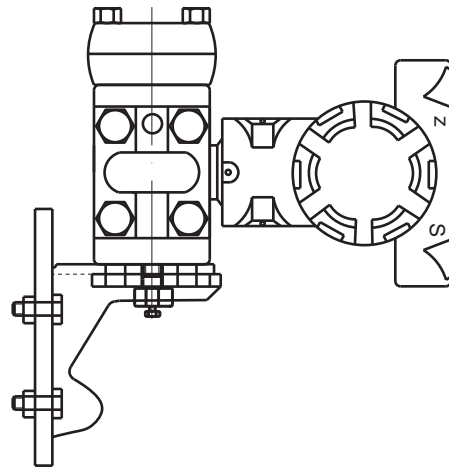
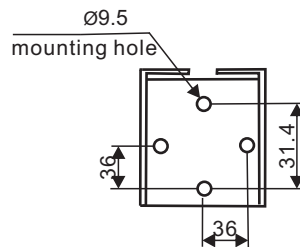
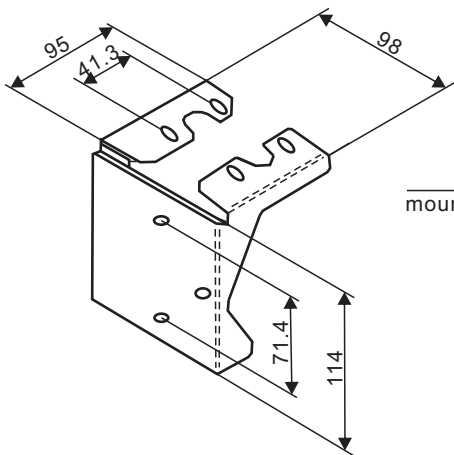
range code	2,3,4,5	6	7	8	9
M(mm)	54	55.4	55.8	57.4	58.5

## 6. Mounting methods

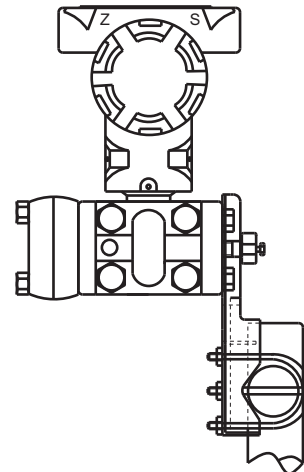
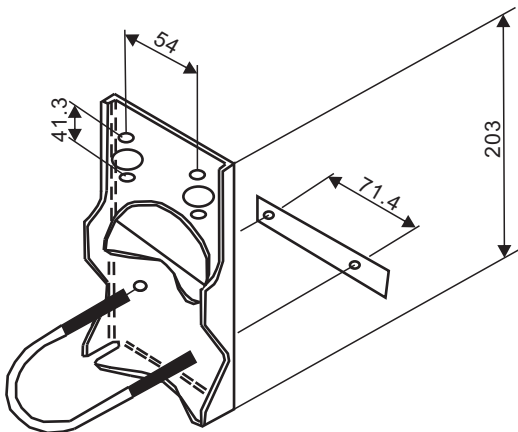
Mounting bracket dimensions and methods, with the help of different structure mounting bracket, the transmitter is independently installed in the measuring object, suitable for DP, GP and AP type.



**a. pipe mounting kit B1**



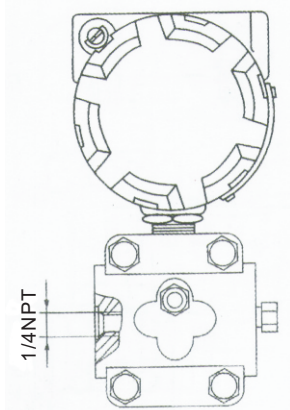
**b. panel mounting kit B2**



**c. pipe flat mount kit B3**

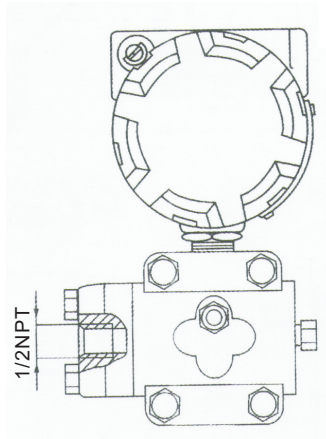
## 7. Process connection

Pressure Chamber Screw Hole Connection



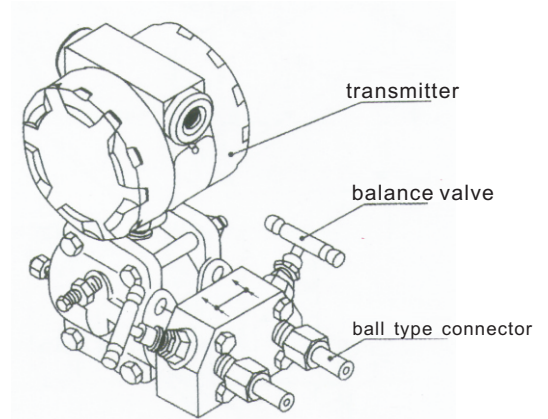
**a. GP**

Adaptor Screw Hole Connection



**b. GP/DP**

install balance valve connection

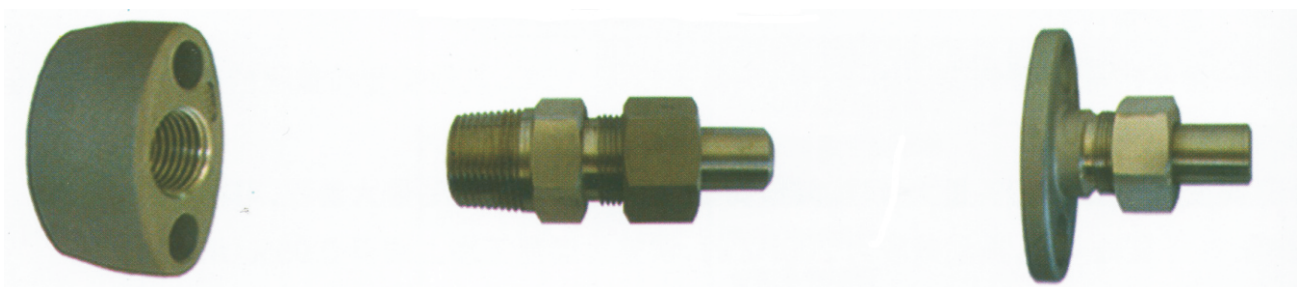


**c. DP**

**Note:** 1. in pressure measurement, from pressure point to the leaded out pressure signal, the pressure pass through shut off valve and connector, then connect with the transmitter.

2. in low system pressure, differential pressure measurement, can be connected as pressure measurement method; in high system pressure measurement, differential pressure signal should go through balance valve (generally three valve manifold) firstly, and then connect with transmitter. The aim of balance valve is: there is no one-way overload pressure during the transmitter's working process, (in order to get stable differential pressure signal), and it will be convenient to cut the differential pressure signal and remove the transmitter in maintenance.

### Pressure Connection Method



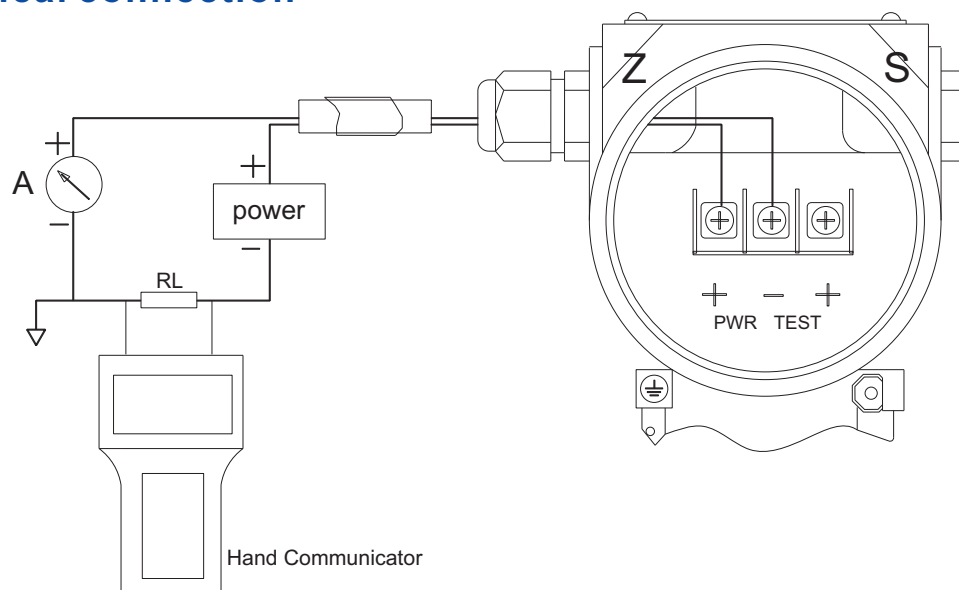
C0: 1/2NPT female connector

C1: 1/2NPT connector with welded pressure pipe

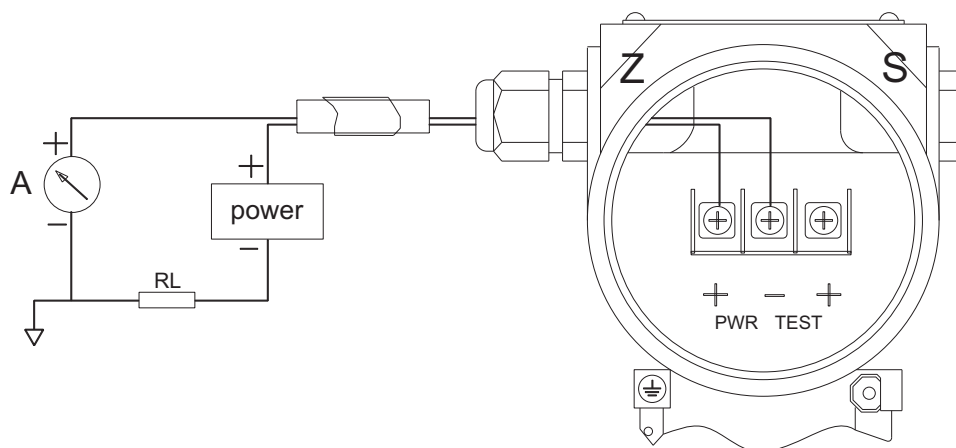
C2: M20x1.5 "T" type connector

Note: if there is no remark when ordering, the transmitter will be supplied with 1/2NPT connector (C0)

## 8. Electrical connection

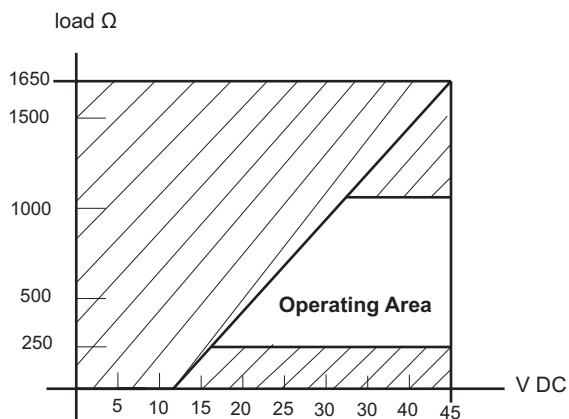


smart 4~20mA output with HART protocol



analogue 4~20mA output

## Loading characteristics





# UIB3351 Metal Capacitive Pressure/Differential Pressure Transmitters

## 9. Classification Table of Transmitter Types

S/N	Name	Model	Range	Line pressure (MPa)	Accuracy
1	Differential Pressure Transmitter	UIB3351DP 2	0~0.15...1kPa	1	0.1 or 0.2
2		UIB3351DP 3	0~0.4...6kPa	4	
3		UIB3351DP 4	0~2.67...40kPa	10	
4		UIB3351DP 5	0~16.7...250kPa		
5		UIB3351DP 6	0~66.7kPa...1MPa		
6		UIB3351DP 7	0~0.167...2.5MPa		
7		UIB3351DP 8	0~0.667...10MPa		
8	High System Pressure Differential Pressure Transmitter	UIB3351HDP 4	0~2.67...40kPa	25 or 32	0.1 or 0.2
9		UIB3351HDP 5	0~16.7...250kPa		
10		UIB3351HDP 6	0~66.7kPa...1MPa		
11		UIB3351HDP 7	0~0.167...2.5MPa		
12	Pressure Transmitter	UIB3351GP 3	0~0.4...6kPa	2.5MPa	0.1 or 0.2
13		UIB3351GP 4	0~2.67...40kPa		
14		UIB3351GP 5	0~16.7...250kPa		
15		UIB3351GP 6	0~66.7kPa...1MPa		
16		UIB3351GP 7	0~0.167...2.5MPa		
17		UIB3351GP 8	0~0.667...10MPa		
18		UIB3351GP 9	0~1.67...25MPa		
19		UIB3351GP 10	0~2.67...40MPa		
20	Absolute Pressure Transmitter	UIB3351AP 4	0~2.67...40kPa	2.5MPa	0.1 or 0.2
21		UIB3351AP 5	0~16.7...250kPa		
22		UIB3351AP 6	0~66.7kPa...1MPa		
23		UIB3351AP 7	0~0.167...2.5MPa		
24		UIB3351AP 8	0~0.667...10MPa		
25	Flange Level Transmitter	UIB3351LT 4	0~2.67...40kPa	2.5MPa	0.1, 0.2 or 0.5
26		UIB3351LT 5	0~16.7...250kPa		
27		UIB3351LT 6	0~66.7kPa...1MPa		
28		UIB3351LT 7	0~0.167...2.5MPa		
29	Remote Pressure Transmitter	UIB3351GP 4	0~2.67...40kPa	2.5MPa	0.2 or 0.5
30		UIB3351GP 5	0~16.7...250kPa		
31		UIB3351GP 6	0~66.7kPa...1MPa		
32		UIB3351GP 7	0~0.167...2.5MPa		
33		UIB3351GP 8	0~0.667...10MPa		
34	Remote Differential Pressure Transmitter	UIB3351DP 3	0~0.4...6kPa	2.5MPa	0.2 or 0.5
35		UIB3351DP 4	0~2.67...40kPa		
36		UIB3351DP 5	0~16.7...250kPa		
37		UIB3351DP 6	0~66.7kPa...1MPa		
38		UIB3351DP 7	0~0.167...2.5MPa		



## Description

UIB3351DP Differential pressure transmitter is made by using differential metal capacitive sensor as Sensitive element, it is widely used for measurement of gas liquid or vapor pressure, differential pressure, liquid level and density.



## Ordering code

UIB3351DP	
code	pressure range & type
3	0~0.4...6kPa
4	0~2.67...40kPa
5	0~16.7~250kPa
6	0~66.7...1000kPa
7	0~167kPa...2500kPa
8	0~667kPa...10000kPa
code	output
E	4~20mA analogue output
S	4~20mA with HART
code	output
B	0.1%FS
C	0.2%FS
code	materials: flange, exhaust vlave, diaphragm
12	nickle plated carbon steel , 316, 316L
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
44	Tantalum, Tantalum, Tantalum
code	system pressure
4	4MPa
10	10MPa
code	other functions(pleaaccording to specific application)
M1	0~100% scale meter
M3	3 1/2LCD digital meter
B1	2" pipe mounting kit
B2	panel mounting kit
B3	2" pipe flat mounting kit
D1	side exhaust valve on top
D2	side exhaust valve on bottom
C1	1/2NPT (the connector is welded 14mm pipe)
C2	M20x1.5 (T shape connector)
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
UIB3351DP	4 S C 22 4 M3B1D1E1



# UIB3351HDP High System Differential Pressure Transmitters

## Description

3351HDP high system pressure differential pressure transmitter can work for different pressure measurement under 32MPa line pressure, with 32MPa high work pressure and overload pressure protection, the transmitter is assured its reliable application in high line pressure system.

3351 HDP is used in petrochemical system and power station for differential pressure measurement, and can withstand one-way overload pressure without damage to itself.



## Ordering code

UIB3351HDP	
code	pressure range & type
4	0~2.67...40kPa
5	0~16.7~250kPa
6	0~66.7...1000kPa
7	0~167kPa...2500kPa
code	output
E	4~20mA analogue output
S	4~20mA with HART
code	output
B	0.1%FS
C	0.2%FS
code	materials: flange, exhaust vlave, diaphragm
12	nickle plated carbon steel , 316, 316L
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
44	Tantalum, Tantalum, Tantalum
code	system pressure
25	25MPa
32	32MPa
code	other functions(according to specific application)
M1	0~100% scale meter
M3	31/2LCD digital meter
B1	2" pipe mounting kit
B2	panel mounting kit
B3	2" pipe flat mounting kit
D1	side exhaust valve on top
D2	side exhaust valve on bottom
C1	1/2NPT (the connector is welded 14mm pipe)
C2	M20x1. 5 (T shape connector)
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
UIB3351HDP	4 E C 22 32 M3B1D1E1

## Description

UIB3351DP flow transmitter is specialized to accept differential pressure signal from the throttling element, and the signal will be converted to 4~20mA standard output, which is proportional to the flow, through the electronic circuit board with the square root function.

UIB3351DP is used for homogeneous fluid medium in pipeline, or the air flow volume / mass flow measurement.



## Ordering code

UIB3351DP	
code	pressure range & type
3	0~0.4...6kPa
4	0~2.67...40kPa
5	0~16.7~250kPa
code	output
E	4~20mA analogue output
S	4~20mA with HART
code	output
B	0.1%FS
C	0.2%FS
code	materials: flange, exhaust valve, diaphragm
12	nickle plated carbon steel , 316, 316L
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
44	Tantalum, Tantalum, Tantalum
code	system pressure
4	4MPa
10	10MPa
code	other functions(according to specific application)
M1	0~100% scale meter
M3	31/2LCD digital meter
B1	2" pipe mounting kit
B2	panel mounting kit
B3	2" pipe flat mounting kit
D1	side exhaust valve on top
D2	side exhaust valve on bottom
C1	1/2NPT (the connector is welded 14mm pipe)
C2	M20x1.5 (T shape connector)
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
3351HDP	4 E C 22 4 M3B1D1E1

## Description

UIB3351GP is capacitive pressure transmitter, it has smart type and analogue type, can measure low pressure till 0.4kPa, and can transfer to a negative pressure transmitter.

It is mainly used for gauge or negative pressure measurement of uniform fluid in pipeline, or for level measurement in open container liquid.



## Ordering code

UIB3351GP	
code	pressure range & type
3	0~0.4...6kPa
4	0~2.67...40kPa
5	0~16.7~250kPa
6	0~66.7...1000kPa
7	0~167kPa...2500kPa
8	0~667kPa...10000kPa
9	0~1670...25000kPa
0	0~2670...40000kPa
code	output
E	4~20mA analouge output
S	4~20mA with HART
code	output
B	0.1%FS
C	0.2%FS
code	materials: flange, exhaust vlave, diaphragm
12	nickle plated carbon steel , 316, 316L
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
44	Tantalum, Tantalum, Tantalum
code	other functions( according to specific application)
M1	0~100% scale meter
M3	31/2LCD5 digit digital meter
B1	2" pipe mounting kit
B2	panel mounting kit
B3	2" pipe flat mounting kit
D1	side exhaust valve on top
D2	side exhaust valve on bottom
C1	1/2NPT (the connector is welded 14mm pipe)
C2	M20x1. 5 (T shape connector)
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
UIB3351GP	4 E C 12 M3B2

\*: Please indicate required pressure range when ordering. If not, the product will be set the max. range when leaving our factory.

## Description

3351AP is absolute pressure transmitter, its chamber's one side receives the measured absolute pressure signal, the other side is closed into a high vacuum reference room .

It is used for absolute measurement in gas removal system, distillation, evaporation tower and a crystallizer, it allows overload pressure within 10MPa.



## Ordering code

3351AP	
code	pressure range & type
4	0~2.67...40kPa
5	0~16.7~250kPa
6	0~66.7...1000kPa
7	0~167kPa...2500kPa
8	0~667kPa...10000kPa
code	output
E	4~20mA analouge output
S	4~20mA with HART
code	output
B	0.1%FS
C	0.2%FS
code	materials: flange, exhaust vlave, diaphragm
12	nickle plated carbon steel , 316, 316L
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
44	Tantalum, Tantalum, Tantalum
code	other functions(please select according to specific application)
M1	0~100% scale meter
M3	31/2LCD5 digit digital meter
B1	2" pipe mounting kit
B2	panel mounting kit
B3	2" pipe flat mounting kit
D1	side exhaust valve on top
D2	side exhaust valve on bottom
C1	1/2NPT (the back of the connector is welded 14mm pressure guiding pipe)
C2	M20x1. 5 (T shape connector)
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
3351AP	4 S C 22 M3B1

## Description

ULB3351 flange type level transmitter is one kind of scene transmitter for mounting in pipelines or vessels. Because its isolating diaphragm contacts liquid medium directly, not need pressure pipe to draw out the pressure from positive pressure side (H side), therefore ULB-3351 is suitable for level, pressure, density measurement of high temperature, macro viscosity, easy crystallized, easy precipitated media.

ULB3351 flange type level transmitter included plane type and insert type. The mounting flange has 3" and 4" according to ANSI standard. If the user has any special requirement please indicate on ordering sheet. The wetted part material of ULB3351 has SS 316L, Hastelloy-C 276, tantalum and Monel etc for options.

The ULB3351 flange type level transmitter is especially suitable for level, pressure and density measurement of special media (high temperature, macro viscosity, easy crystallized, easy precipitated, strong corrosion) in open or sealed containers.

## Features

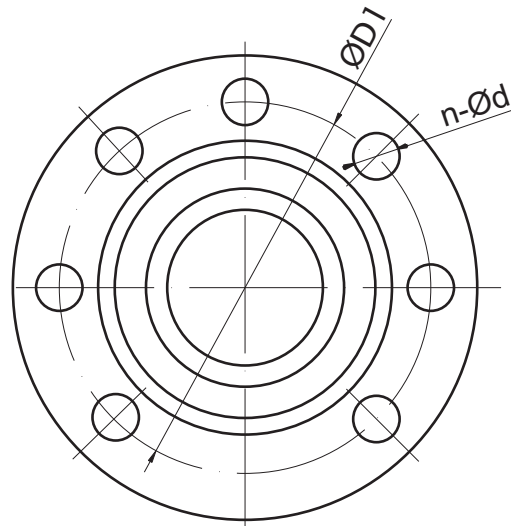
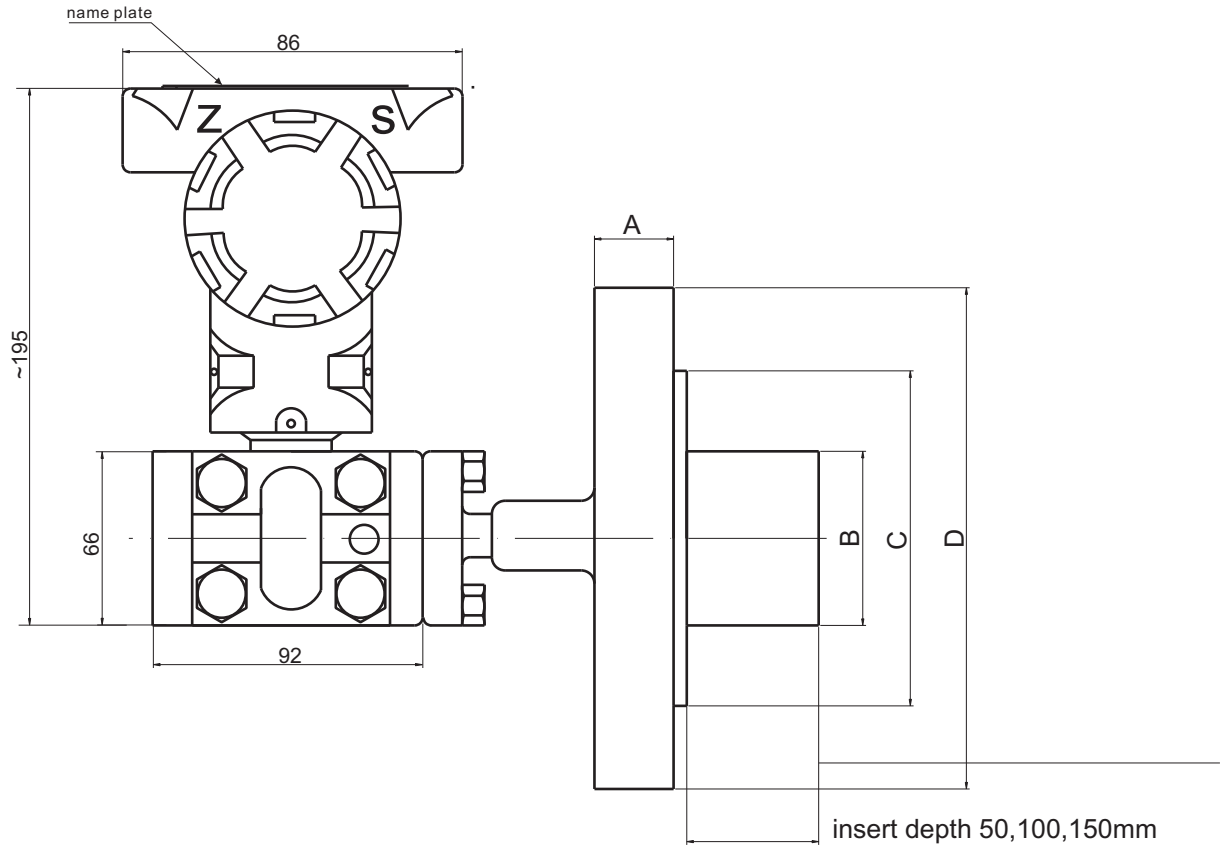
- Measuring range: 0~2.67kPa...2500kPa
- For level, pressure, density measurement of high Temperature, macroviscosity, easy crystallized, easy precipitated or strong corrosive media
- Adjustable range: 6:1 for analog type, 15:1 for intelligent type
- High accuracy, good reliability and stability
- Intrinsic safety and flame proof option.



## Specifications

pressure medium	liquid compatible with stainless steel
measuring ranges	0~2.67kPa...2500kPa
output signal	4~20mA (HART optional)
accuracy	0.1%FS,0.2%FS(standard), 0.5%FS
load resistance	$R_L=(U-12V)/0.02A$ (4~20mA current output) U—loop voltage (V)
long-term stability	<0.1%FS/year
supply voltage	12~45VDC
storage temperature range	-40~+105°C
operating temperature range	-40~+85°C
measured media temperature range	-40~+200°C
temperature coefficient of zero	0.1%FS/10°C
temperature coefficient of span	0.05%FS/10°C
insulation resistance	100MΩ@50VDC
process connection	3" mounting flange or others
protection	IP67
explosive-proof	Exia II CT6 or Exd II CT6
material of pressure membrane	316L stainless steel
oil-filled	silicone oil or fluorocarbon oil
housing material	low copper aluminum alloy

## Dimensions



flange size						bolt hole		
dimensions	type	Diameter (D)	A	B	C	number	diameter(d)	diameter distribution (D1)
3"	150Lb	190	30	66	127	4	19	152
4"	150Lb	228	30	89	157	8	19	190
3"	300Lb	210	35	66	127	8	22	168
4"	300Lb	254	38	89	157	8	22	200



# ULB3351 Flange Type Level Transmitter

## Ordering code

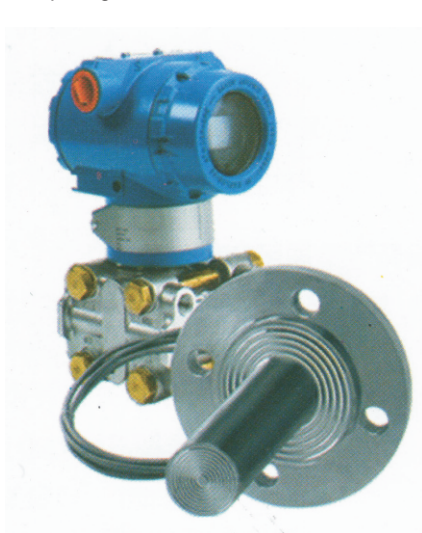
ULB3351	
code	measuring ranges of intelligent type
4	0~2.67...40kPa
5	16.7...250kPa
6	66.7...1000kPa
7	167...2500kPa
code	output
E	4~20mA analog output
S	4~20mA with HART Protocol
code	accuracy
C	0.2%FS
D	0.5%FS
code	mounting flange & material
A	3"(80)150LB(2.0MPa) zinc plated carton steel or 316L SS
B	4"(100)150LB(2.0MPa) zinc plated carton steel or 316L SS
C	3"(80)300LB(5.0MPa) zinc plated carton steel or 316L SS
D	4"(100)300LB(5.0MPa) zinc plated carton steel or 316L SS
T	as customer's specific request
code	materials: flange, exhaust vlave, diaphragm
12	nickle plated carbon steel , 316, 316L
15	nickle plated carbon steel,316,Tantalum
22	316,316,316L
23	316,316,Hastelloy-C
24	316,316,Monel
25	316,316,Tantalum
33	Hastelloy-C, Hastelloy-C, Hastelloy-C
35	Hastelloy-C, Hastelloy-C, Tantalum
code	oil-filled
S	Dc200# series silicone oil -40~149°C
H	high temperature silicone oil 15~315°C
F	fluorocarbon oil 45~205°C
code	insert depth
H0	0
H1	50mm
H2	100mm
H3	150mm
code	other functions
M0	no display meter
M1	linear display meter, 0~100%scale
M2	3-1/2LCD digital meter
D1	side exhaust valve on top
D2	side exhaust valve on bottom
E1	flame proof Exd II CT6
E2	intrinsic safety Exia II CT6
ULB3351	4 E C C 12 S H0 M1D1E1

\*: Please indicate required pressure range when ordering. If not, the product will be set the max. range when leaving our factory.



## Description

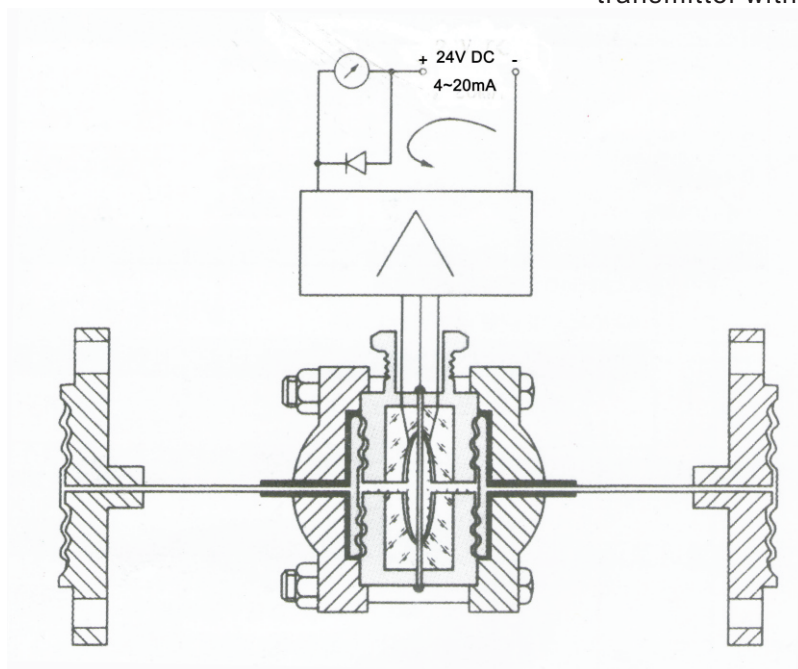
3351GP / DP remote pressure/differential pressure transmitter feels the measured pressure through the remote device which is installed in the pipeline or container. The pressure through the filling silicone oil ( or other liquid ) in capillary is transmitted to the isolated diaphragm of the transmitter's, realizes the process pressure measurement (see the following structure diagram ).



transmitter with single remote device



transmitter with dual remote device



structure diagram

## Features

- can eliminate the possibility of medium leakage from the pressure guiding pipe and cause the pollution for surrounding environment.
- improve the process measurement reliability and stability
- remote assembly is welding structure with strong reliability and low volume liquid filled cavity design, reduce the effect of temperature.
- working pressure is no less than 3.5kPa (absolute pressure)



# UIB3351 Remote Pressure /Differential Pressure Transmitter

## Application

Remote transmitter is mainly used for measurement of following media

- High temperature or high viscosity medium
- Easy to crystallize or solidify medium
- With solid or suspension precipitation medium
- Strong corrosive or toxic medium
- Replacement of the measured medium requires washing but without any not mixing
- Sanitary cleaning requirements are relatively high.

## Ordering code

UIB3351GP/DP					
code	pressure range				
4	0~3.5...40kPa				
5	0~16.7...250kPa				
6	0~66.7...1000kPa				
7	0~167...2500kPa				
8	0~0.667...10MPa				
code	output signal				
E	4~20mA analog output				
S	4~20mA digital signal based on HART Protocol				
code	flange	isolated diaphragm			
12	carbon steel nickel plated	316LSST			
22	316 SST	316L SST			
code	remote device				
S1	1 remote device				
S2	2 remote devices				
code	other functions				
D1	linear display meter, 0~100% scale				
D2	3-1/2 digital meter%				
B1	2" pipe mounting kit				
B2	panel mounting kit				
B3	2" pipe flat mounting kit				
E1	flame proof Exd II CT6				
E2	intrinsic safety Exia II CT6				
UIB3351DP	II	A	22	S2	D2B1

Note: remote flange ordering please refer to “1199 remote device ordering and types”

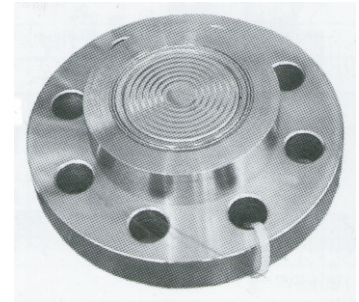
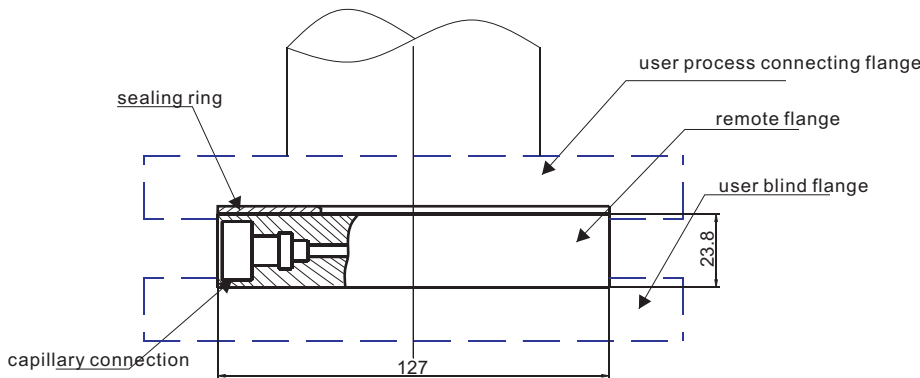
## Description

The pressure transmitter with remote device, includes one pressure transmitter, one or two remote diaphragm sealing device, and the filling liquid. The flange can be installed directly or connected through capillary. When working, the thin & flexible membrane and the filling liquid will separate the transducer's pressure sensitive element from the process medium, the diaphragm will be connected with the transmitter through the capillary or flange.

When applying process medium pressure, the diaphragm is deformed, and will transfer the measured pressure to transmitter membrane through the liquid filling system and capillary. The passed pressure will cause the sensing diaphragm on the transmitter's pressure sensitive element to deform, the deformation is proportional to the process pressure, and is converted to the appropriate current, voltage or digital HART output signal

Remote diaphragm seal device mainly includes: (1199) PFW flat remote device, (1199) RTW thread mounted remote device, (1199)EFW is inserted barrel type remote device, (1199) flange mounted remote transmission device and (1199 ) the SSW health type remote transmission device

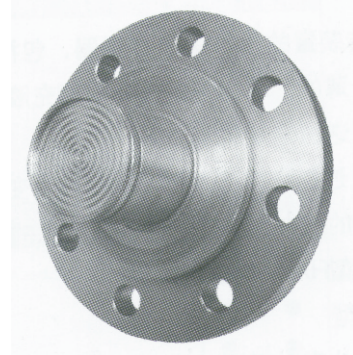
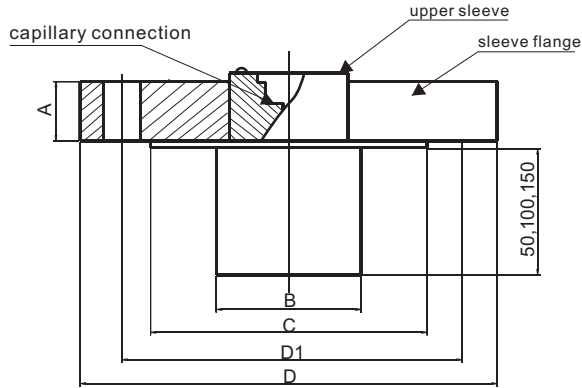
## 1199PFW flat remote device



## Ordering code

1199PFW type			
	code	flange types	
	10	2"-150LB	
	11	3"-150LB	
	00	other standard	
		code	the diaphragm material of remote device
		A	316L SST
		B	Hastelloy C-276
		C	Tantalum
		D	Monel
		code	mounting flange material
		11	316SST
		00	other material
1199PFW	11	A	11

## 1199EFW inserted barrel type remote device



Dimensions of 1199EFW inserted barrel type remote device

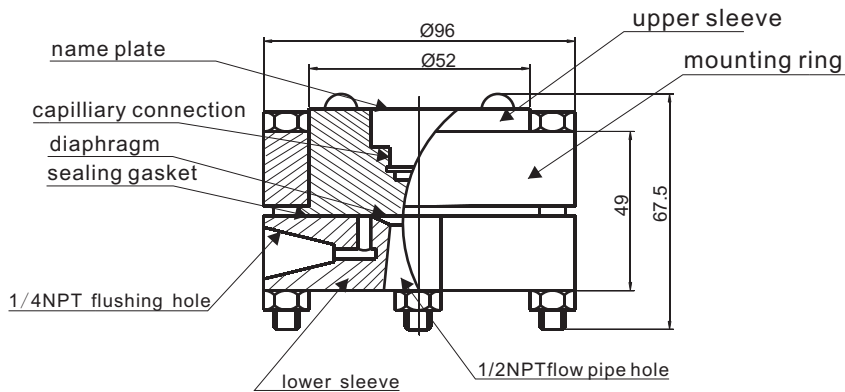
flange size (mm)						bolt hole		
size	type	D (dia)	A	B	C	n (number)	d (dia)	D(distribution dia.)
3"	150Lb	190	30	66	127	4	19	152
4"	150Lb	228	30	89	157	8	19	190
3"	300Lb	210	35	66	127	8	22	168
4"	300Lb	254	38	89	157	8	22	200

## Ordering code

### 1199EFW type

1199EFW	code	Diameter and wetted part material		
	11	(3") 66mm, 316 SST		
	12	(3") 66mm, hastelloy		
	13	(4") 89mm, 316 SST		
	14	(4") 89mm, hastelloy		
	code	diaphragm material of remote device		
	A	316L SST(for code 11,13)		
	B	Hastelloy C-276(for code 12,14)		
	C	tantalum		
	code	inserted barrel length		
	20	50mm		
	40	100mm		
	60	150mm		
	00	others		
code	flange material and rated pressure			
A11	Galvanized steel, max. working pressure 2.0MPa			
A12	Galvanized steel, max. working pressure 5.0MPa			
1199EFW	11	A	60	A11

## 1199RTW thread mounting type remote device

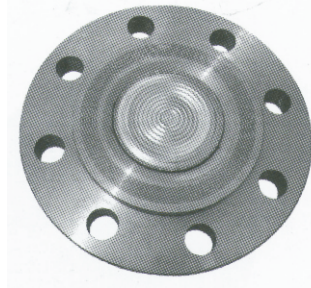
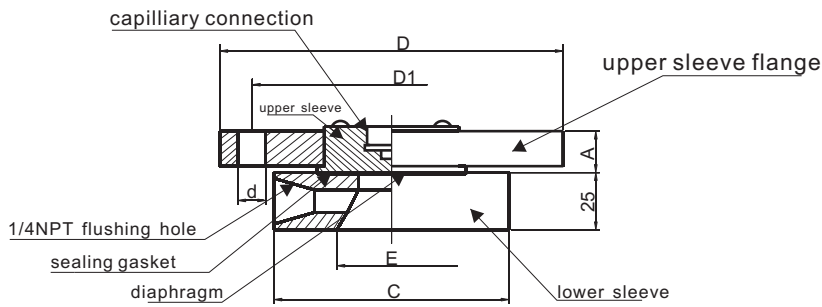


Dimensions of 1199RTW thread mounted remote device (max. working pressure 10MPa)

### Ordering code

1199RTW type						
	code	spare flushing hole				
	11	no				
	12	yes				
		code	diaphragm material of remote device			
		A	316L SST			
		B	hastelloy C-276			
		C	tantalum			
			code	structure material		
			11	upper sleeve: 316SST, mounting ring: carbon steel with nickel plated, gasket: asbestos rubber		
			31	upper sleeve: 316SST, mounting ring: 316SST, gasket: asbestos rubber		
				code	lower sleeve material	
				A	316L SST	
				B	hastelloy C-276	
				code	pressure guiding connection hole	
				11	M20x1.5 female	
				13	1/2NPT	
				00	as request	
1199RTW	11	A	11	A	11	

## RFW flange type remote device

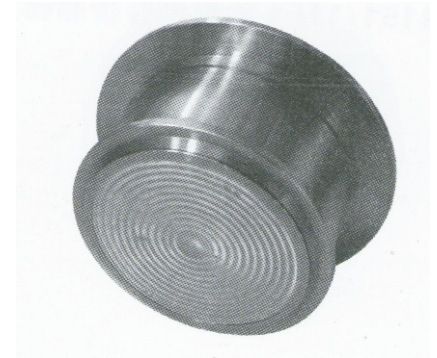
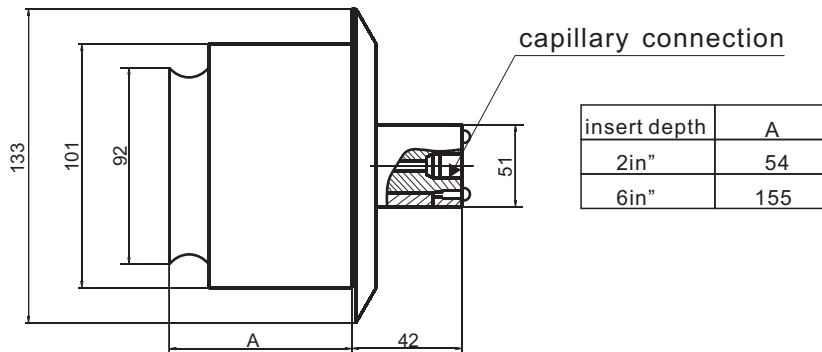


upper sleeve flange size								lower sleeve flange size
Nominal pipe size	nominal pressure (LB/MPa)	convex dia (C)	outer dia (D)	thickness (A)	Bolt hole center distance(D1)	bolt hole number(n)	bolt hole dia (d)	dia(E)
1"	150/2	62	108	14	79	4	16	26.9
	300/5	66	124	17	89	4	20	
1.5"	150/2	73	127	17	98	4	16	41.9
	300/5	73	156	20	114	4	23	
2"	150/2	92	152	19	120	4	20	52.5
	300/5	92	165	22	127	8	20	
3"	150/2	127	190	23	152	4	20	79
	300/5	127	210	25	168	8	23	
4"	300/2	164	229	23	190	8	20	103
	300/5	164	254	31	200	8	23	

## Ordering code

1199RFW type	
code	spare flushing hole
11	No
12	yes
code	diaphragm material of remote device
A	316L SST
B	hastelloy C-276
C	tantalum
D	monel
code	structure material
11	upper sleeve: 316SST, mounting ring: carbon steel with nickel plated, gasket: asbestos rubber
31	upper sleeve: 316SST, mounting ring: 316SST, gasket: asbestos rubber
code	lower sleeve material
A	150LB(2.0MPa)
B	300LB(5MPa)
code	pressure guiding connection hole
1	M20x1.5 female
1.5	1/2NPT
2	as request
3	M20x1.5 female
4	1/2NPT
0	as request
code	lower sleeve material
A	316SST
B	hastelloy C-276
E	carbon steel with nickel plated
T	others
1199RFW	11 A 11 A 3 A

## 1199SSW insert barrel type remote device



## Ordering code

### 1199SSW type

code	remote diaphragm	insert barrel	clamp
A	316L	316	carbon steel
B	hastelloy C-276	316	stainless steel
T	others		
	code	insert depth	
	20	50	
	40	100	
	60	150	
	70	as request	

1199SSW A 20

## Filled Fluid Characteristics

code	filled fluid	temp. range	gravity (g/cm <sup>3</sup> )	temperature coefficient of expansion	viscosity at 25°C
not filled	200 series silicone oil	-40~149°C	0.934	0.00108	<20
S	high temp. silicone oil	15~315°C	1.07	0.00053	44~50
F	fluorosilicone oil	-45~205°C	1.85	0.000864	65

**Note:** when select filled fluid, please remark "S" or "F" following the ordering code for capillary; if not, we will supply 200 series silicone oil as filled fluid.