

### FEATURES

- Suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure
- Outputs a 4~20mA DC signal corresponding
- Highly accurate and stable sensor
- Measure the static pressure which can be shown on the integral indicator or remotely monitored via HART communications
- Quick response
- Self-diagnostics
- Optional status output for pressure high/low alarm.



### PERFORMANCE SPECIFICATIONS

Reference Accuracy of Calibrated Span (includes terminal-based linearity, hysteresis, and repeatability)*	: $\pm 0.075\%$ or $\pm 0.1\%$ if $TD > 10$ ( $TD = URL/SPAN$ ): $\pm (0.0075 \times TD)\%$ or $\pm (0.01 \times TD)\%$
Ambient temperature effects	: $-20 \dots 65^\circ\text{C}$ : $\pm (0.15 \times TD + 0.05)\% \times \text{Span}$ Every $10^\circ\text{C}$ is $\pm 0.08\% \times \text{Span}$ ( $TD=1$ ) $-40 \dots -20^\circ\text{C}$ & $65 \dots 85^\circ\text{C}$ : $\pm (0.3 \times TD + 0.1)\% \times \text{Span}$
Static pressure effects	: $\pm (0.05\% \text{URL} + 0.075\% \text{Span}) / 100\text{bar}$
Overpressure effects	: $\pm 0.1\% \times \text{Span} / 100\text{bar}$
Stability	: $\pm 0.1\% \times \text{Span} / 3$ years
Power supply effects	: $\pm 0.001\% / 10\text{V}$ ( $12 \sim 42\text{V DC}$ )

\* The square root accuracy is 1.5 times of reference accuracy of calibrated span.

### FUNCTIONAL SPECIFICATIONS

Zero adjustment limits	: Zero can be fully elevated or suppressed, within the lower and upper range limits of the capsule.
Mounting position effects	: Rotation in diaphragm plane has no effect. Tilting up to 90 degree will cause zero shift up to 0.4 kPa which can be corrected by the zero adjustment.
Output	: Two wire 4~20mA DC output with digital communications, linear or square root programmable. HART protocol are superimposed on the 4~20mA DC signal. Output range: 3.9mA to 20.5mA.
Failure alarm (the mode can be selected)	: Low Mode (min): 3.7mA High Mode (max): 21mA No Mode (hold): Keep the effective value before the fault. Note: The standard setting of failure alarm is High Mode.
Response time	: The amplifier damping constant is 0.1 sec; The sensor damping constant is 0.1~1.6 sec, it depends on the range and range compression ratio. Amplifier damping time constant is adjustable from 0.1 to 60 sec by software and added to response time.
Preheat	: < 15s
Ambient temperature limits	: $-40$ to $85^\circ\text{C}$ $-20$ to $65^\circ\text{C}$ with LCD display or fluorine rubber sealing

### FUNCTIONAL SPECIFICATIONS

Storage and transportation temperature limits	:	-50 to 85°C; -40 to 85°C with LCD display		
Working pressure limits (silicone oil)	:	Maximum working pressure: 160bar, 250bar, 400bar		
Static pressure limits	:	0.035bar abs. to maximum working pressure.		
One-way overload pressure limit	:	The maximum one-way overload pressure is maximum working pressure.		
Explosion protected type	:	AA: ATEX: II 2 G D Ex db IIC T4/T5/T6 Gb Ex tb IIIC T80°C/T90°C/T130°C Ta = -40°C to +60°C	AB: ATEX: II 1 G Ex ia IIC T4-T6 Ga -40°C ≤ T <sub>amb</sub> ≤ +40°C, T6 -40°C ≤ T <sub>amb</sub> ≤ +50°C, T5 -40°C ≤ T <sub>amb</sub> ≤ +85°C, T4	AC: ATEX: II 2 D Ex ia IIIC T80°C/T95°C/T130°C Da -40°C ≤ T <sub>amb</sub> ≤ +40°C, T80°C -40°C ≤ T <sub>amb</sub> ≤ +50°C, T95°C -40°C ≤ T <sub>amb</sub> ≤ +85°C, T130°C

Span/ Range Limits		kPa	inH <sub>2</sub> O	mbar	mmH <sub>2</sub> O
FD	Span	0.2~6	0.8~24	2~60	20~600
	Range limits	-6~6	-24~24	-60~60	-600~600
HD	Span	0.4~40	1.6~160	4~400	40~4000
	Range limits	-40~40	-160~160	-400~400	-4000~4000
KD	Span	2.5~250	10~1000	25~2500	0.25~25mH <sub>2</sub> O
	Range limits	-250~250	-1000~1000	-2500~2500	-25~25mH <sub>2</sub> O
MD	Span	30~3000	120~12000	0.3~30bar	3~300mH <sub>2</sub> O
	Range limits	-500~3000	-2000~12000	-5~30bar	-5~300mH <sub>2</sub> O

### INSTALL

Supply & load requirements	:	24V DC supply, R≤(Us-12V)/Imax kΩ, Imax=23mA. Maximum voltage limited: 42V DC, Minimum voltage limited: 12V DC, 15V DC (with LCD display) 230Ω to 600Ω for digital communication
Electrical connection	:	The electrical connection is made via cable entry M20x1.5. The screw terminals are suitable for wire cross-sections up to 2.5mm.
Process connection	:	Flange with fixing thread 7/16-20 UNF and 1/4-18 NPT (F) on both sides.

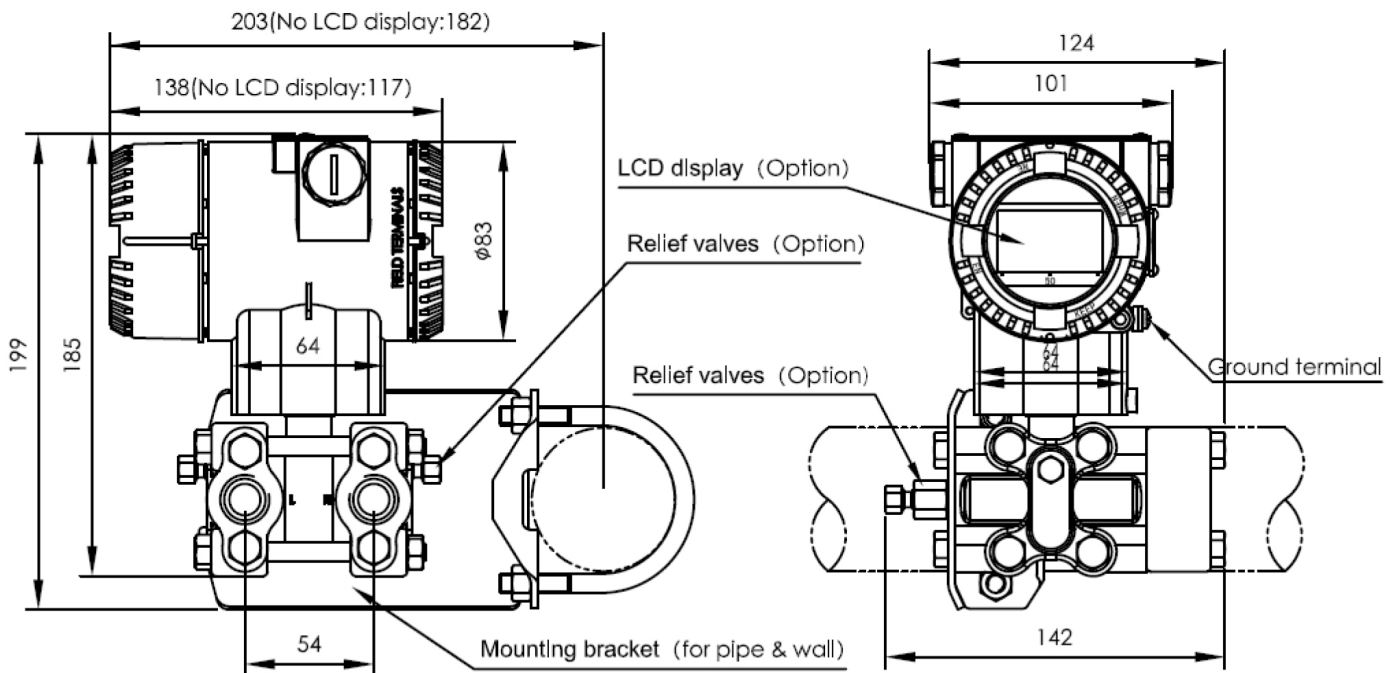
### PHYSICAL SPECIFICATIONS

Sensor body	: 316L stainless steel
Isolating diaphragm	: 316L stainless steel / Hastelloy C / Gold plated on 316L / FEP plated on 316L / Tantalum
Cover flange	: 316 stainless steel
Nuts and bolts	: 304 stainless steel
Process connector	: 316 stainless steel
Fill fluid	: Silicone oil
Process connector gasket	: Perbunan(NBR) / Viton(FKM) / Teflon(PTFE)
Amplifier housing	: Aluminum with epoxy resin coat
Housing gasket	: Perbunan(NBR)
Name plate and tag	: 304 stainless steel
Weight	: 3.3kg
Degrees of protection	: IP67

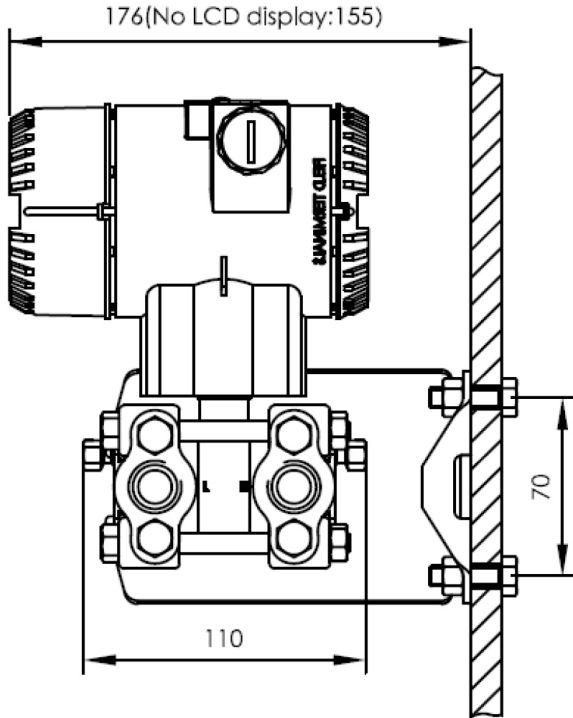
### DIMENSIONAL DRAWING

Horizontal Impulse Piping Type (side face)

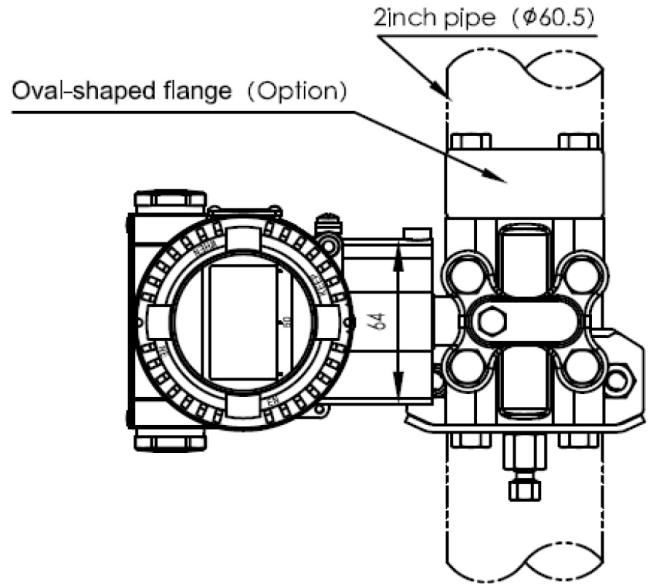
Horizontal Impulse Piping Type (front face)



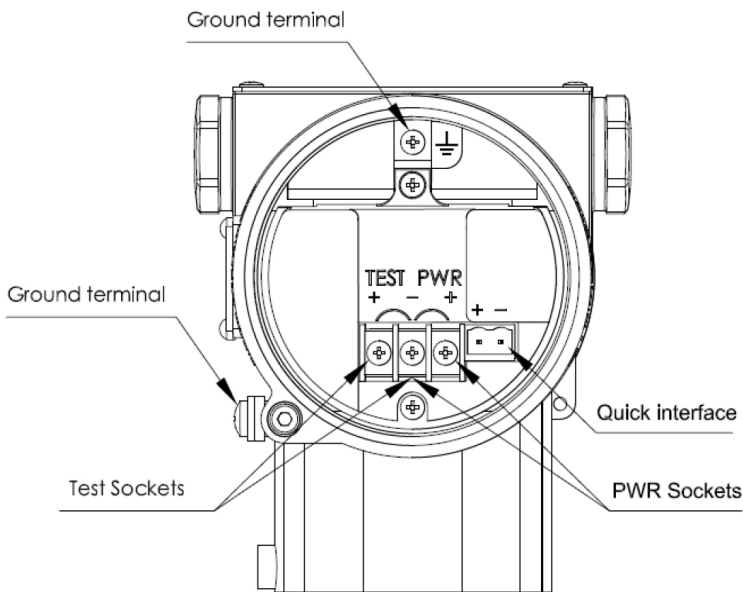
### Horizontal Impulse Wall mounting Type



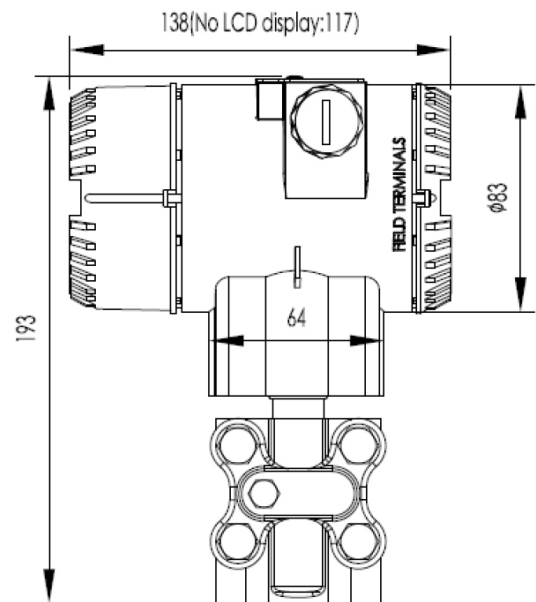
### Vertical Impulse Piping Type



### Terminal Configuration



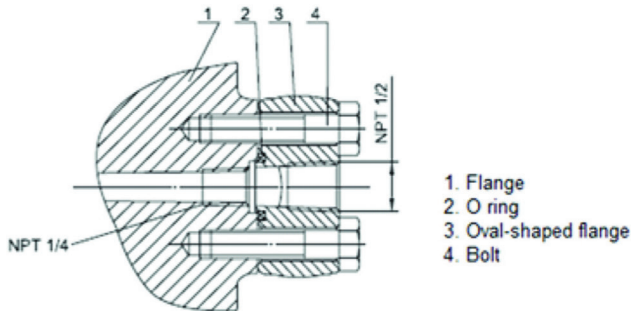
### Vertical mounting flange (Code V)



**NOTE:** Quick interface functionally equivalent to the signal terminal

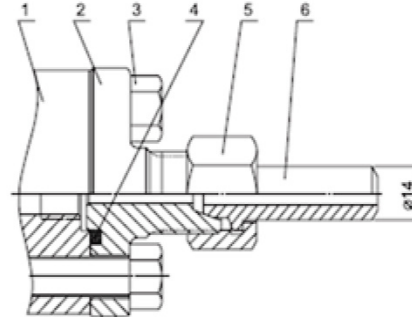
### PROCESS CONNECTIONS DESCRIPTION

#### Oval-shaped flange with 1/4-18 NPT female (Code A1)



1. Flange
2. O ring
3. Oval-shaped flange
4. Bolt

#### D-shaped connector with M20 X 1.5 male (Code A2)



1. Flange
2. D-shaped connector
3. Bolt
4. O ring
5. M20x1.5 Nut
6. Joining pipe

### ORDERING CODES

#### Required

#### 1. APPROVAL

AA	Hazardous area; ATEX: II 2 G D <sup>1</sup>	AA
AB	Hazardous area; ATEX: II 1 G <sup>1</sup>	
AC	Hazardous area; ATEX: II 2 D <sup>1</sup>	
B	Non-Hazardous area	

#### 2. OUTPUT: DISPLAY

1	2-wire 4-20mA HART; +LCD	1
2	2-wire 4-20mA HART; None	

#### 3. SENSOR RANGE: (NOMINAL RANGE)

FD	-60~60 mbar / -0.87~0.87 psi	FD
HD	-400~400 mbar / -5.8~5.8 psi	
KD	-2500~2500 mbar / -36.25~36.25 psi	
MD	-5~30 bar / -72.5~435 psi	

#### 4. REFERENCE ACCURACY

1	±0.075% set span	
2	±0.1% set span	2

#### 5. STATIC PRESSURE SENSOR

N	None	N
C	400 bar	
D	100 bar	

#### 6. WORKING PRESSURE

1	160 bar	1
2	250 bar	

#### Note:

1. Refer to page 02

### 7. PROCESS CONNECTIONS

UA	7/16-20UNF and 1/4-18" NPT(F), No relief valve	
UB	7/16-20UNF and 1/4-18" NPT (F), Relief valves at the end of flanges	UB
UC	7/16-20UNF and 1/4-18" NPT (F), Relief valves at the upper part of the flange side	
UD	7/16-20UNF and 1/4-18" NPT (F), Relief valves at the lower part of the flange side	
UF	Vertical mounting flange, 7/16-20UNF and 1/4-18" NPT (F), Relief valves at the upper part of the flange side	
L	Level (Low side can select: UB/UC/UD)	
R	Remote seal	

### 8. DIAPHRAGM SEAL MATERIAL

1	316 stainless steel - Silicone oil	1
2	Hastelloy C - Silicone oil	
3	Gold plated on 316L	
4	FEP plated on 316L	
5	Tantalum	

#### Additional Option

### 9. SPECIAL FUNCTION

N	None	N
AS	Square root output	
AA	Degrease cleansing treatment (Oxygen measurement)	

### 10. INTEGRAL INDICATOR

N	None	
A1	LCD display	A1
A2	Backlit LCD display	

