

General Introduction

HH Series Capacitance Type Transmitter

FEATURES

- High accuracy
- No mechanical and movable parts, little repair work
- Span and zero continuous and adjustable from outside
- Good stability
- Positive shift amount to 500%; negative shift 600%
- Two-wire system 4~20mA DC
- Damping adjustable, overpressure protection
- Solid components, patch-type printed circuit board
- Explosion-proof structure, all-day use
- Unified structure, strong interchangeability of parts
- Miniaturization (total height 166mm)
- Diaphragm materials of contacting mediums option (316L, TAN, HAS-C, MONEL, etc.)
- smart HART protocol

FUNCTION PARAMETERS

- ▲ Service: liquid, gas and steam
- ▲ Measuring range : 0~0.06 kPa to 0~40Mpa
- ▲ Output signal : 4~20mA DC (four-wire 220V AC power supply, 0~10mA DC output for special)
- ▲ Power supply : 12~45V DC, generally 24V DC
- ▲ Features of loading: relation equation of loading impedance RL and power voltage
 $V_s: RL \leq 50(V_s - 12)$
- ▲ Indicator : pointer-type linearity indication 0~100% scale mark or LCD indicator, LED indicator.
- ▲ Explosion proof : a. explosion isolation d II CT6
b. intrinsically safe ia II CT6
- ▲ Positive and negative shifts : after positive and negative shifts of zero absolute values of upper-and-lower-limit values of span and measuring range not exceed 100% of upper limit of measuring range.(smart type : turn down ratio 20:1, 40:1)
Maximum positive shift is 500% of minimum adjusting span; maximum negative shift is 600% of minimum adjusting span.
- ▲ Temperature range: amplifier operation temperature range: -29 ~ +93C
(LT type: -25 ~ +70C); measuring component of fill silicone oil: -40 ~ +104C
flange type transmitter fill hi-temperature silicone oil: -20 ~ +315C normal silicone oil: -40 ~ +149C

- ▲ Static pressure : 4, 10, 25, 32Mpa
- ▲ Humidity : relative humidity 0~100%
- ▲ Volume absorption : < 0.16cm³
- ▲ Damping (phase step response) : For silicone oil, generally between 0.2s and 1.67s, continuous and adjustable

TECHNICAL DATAS

(no shift, under standard operation conditions, fill silicone oil, 316 SS diaphragm)

1. Accuracy class: +/-0.25%, +/-0.5% (smart type: +/-0.1%, +/-0.075%)
2. Dead zone: no (<=0.1%)
3. Stability : within 6 months not beyond absolute value of basic error of maximum span
4. Vibration effect: on a random ax upward, at vibration frequency of 200 Hz, error +/-5%/g of upper limit of measuring range.
5. Power effect : < 0.005%/V of output span
6. Loading effect : no effect from loading at stable power
7. Effect of installation position : at most 0.24kPa of zero error, no effect on span

OTHERS

1. Diaphragm: 316 SS, HC -276, Monel or Ta
2. Exhaust/vent Valve: 316 SS, HC or Monel
3. Flange and Connector: 316 SS, HC or Monel
4. Contacting medium "O" ring: acrylonitrile-butadiene rubber, fluorine rubber
5. Fill liquid: silicone oil or inert oil
6. Blot: 316 SS
7. Electronic Body Material: low copper-aluminum alloy
8. Ignition Voltage Connection Fit : flange NPT 1/4, center distance 54mm; connector NPT 1/2 or M20 x1.5 male round-cone surface sealed, when carrying connector the center distance 50.8, 54, 57.2mm (NPT taper thread accords with GB/T12716-91)
9. Signal line connecting hole : G 1/2"
10. Weight : 4.2 kg (standard type)

TRANSMITTER SELECTION

The following sheet illustrates the model constitution of our products in detail. Users can easily select product models according to this sheet.

Code	Name
HH	Huahai M&C
Code	Directions

0	Subatmospheric pressure
1	Gauge pressure (differential pressure and static pressure is 0.4 Mpa for span formula 1,2)
2	Absolute pressure
3	Differential pressure static pressure 2.5 MPa
4	Differential pressure static pressure 4MPa
5	Differential pressure static pressure 6.4MPa
6	Differential pressure static pressure 16 MPa
7	Differential pressure static pressure 25MPa
8	Differential pressure static pressure 32 MPa
9	Differential pressure static pressure 40MPa

Code	Measuring range
1	0-0.06~0.3kPa
2	0-0.25~1.5kPa
3	0-1.2~7.2kPa
4	0-6~36kPa
5	0-30~180kPa
6	0-160~1000kPa
7	0-400~2500kPa
8	0-1600~10000kPa
9	0-4000~25000kPa
0	0-7000~40000kPa

Code	Type1
0	Standard type
1	Single flush flange
2	Double flush flange
3	Single insertion flange
4	Double insertion flange
5	One-flush & one-insertion flange

Code	Type 2
0	Popularization type
1	Normal smart type (HART communication)

HHGP Type

SMART Pressure Transmitter

HHGP type (smart) pressure transmitter has high overpressure strength and good stability.

Input span: 0~0.25kPa, 0~10Mpa, 0~40Mpa.

Service medium: liquid, gas and steam

Overpressure limit:

Span is the impose below 6Mpa: 0 (absolute pressure) ~14MPA

Span is the impose of 20Mpa: 0 (absolute pressure) ~32MPA

Span is the impose of 40Mpa: 0 (absolute pressure) ~52MPA

Flange can afford 60MPa pressure.



MODEL SELECTION

A	S	Code	Measuring range			
Analogue	Smart	HHGP-1200	0-0.25~1.5kPa			
		HHGP-1300	0-1.2~7.2kPa			
		HHGP-1400	0-6~36kPa			
		HHGP-1500	0-30~180kPa			
		HHGP-1600	0-160~1000kPa			
		HHGP-1700	0-400~2500kPa			
		HHGP-1800	0-1600~10000kPa			
		HHGP-1900	0-4000~25000kPa			
		HHGP-1000	0-7000~40000kPa			
		Code	Structure material			
			Flange connector	Exhaust/vent valve	Isolation Diaphragm	Fill liquid
		F12	Cadmium plated CS	316L SS	316L SS	Silicone oil
		F13	Cadmium plated CS	Hastelloy C	Hastelloy C	
		F14	Cadmium plated CS	Monel	Monel	
		F15	Cadmium plated CS	316L SS	Tantalum	

F22	316L SS	316L SS	316L SS
F23	316L SS	316L SS	Hastelloy C
F24	316L SS	316LSS	Monel
F25	316L SS	316L SS	Tantalum
F33	Hastelloy C	Hastelloy C	Hastelloy C
F35	Hastelloy C	Hastelloy C	Tantalum
F44	Monel	Monel	Monel
Code	Optional components		
M1	Linearity indicator 0-100% scale mark		
M2	Digital indicator		
B1	Bend bracket for pipe mounting (2" pipe)		
B2	Bend bracket for plate mounting		
B3	Flat bracket for pipe mounting (2" pipe)		
D1	Side exhaust/vent valve of flange on top		
D2	Side exhaust/vent valve of flange at bottom		
E1	Common cable connector		
E2	Flame-proof cable connector		
G1	Waist type flange		
G2	Welding pipe connector		
G3	2 valve manifold		
G4	3 valve manifold		
d	Explosion separation type Exd II CT6		
i	Intrinsically safe Exib II CT5		



S	HHGP-1200	F22	M2B1D1E1G2i	1kPa (factory span)
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Remarks: ① Factory span should be specified when ordering, if not specified, at the highest rated span output, structure material F22 is standard equipment.

② Process connection and electrical connection to be specified by the customer.