CS

CODE AND SPECIFICATIONS SHEET

High-precision differential pressure transmitter

JUN-E10

JUN-E10 high precision differential pressure transmitter is the world's advanced pressure sensor technology and packaging process, carefully developed an ultra-high performance pressure sensor differential pressure transmitter, The highest measurement accuracy is ± 0.025%, and the range ratio can reach 100:1. The transmitter has a built-in mono-crystalline silicon sensor to output the DC 4 ～ 20mA signal corresponding to the measured pressure.

The product is suitable for gas, liquid, steam and other process fluid pressure measurement, can be used in the environment with explosion-proof requirements.

Through mutual communication with intelligent terminals, various functions can be set, adjusted and monitored for output signals.

Standard layout

Export

Output signal: DC 4 ～ 20mA

Output signal range: DC3.8～20.8mA (maximum)

Supply voltage

DC16.5～55V (See Figure 1 for details)

Load impedance

0～2199Ω Working status (see Figure 1 for details)

250～600Q HART

Communication mode

HART、PROFIBUS-PA、FOUNDATION Field-bus

Determine the pressure range

Scope code	Range	Measurement range
G06	6kPa	Minimum range 200Pa,-6～6kPa
G40	40kPa	Minimum range 400Pa,-40～40kPa
G250	250kPa	Minimum range 2.5kPa,-250～250kPa
G1K	1MPa	Minimum range 10kPa,-0.5～1MPa
G3K	3MPa	Minimum range 30kPa,-0.5～3MPa
G10K	10MPa	Minimum range 100kPa,-0.5～10MPa

Maximum working pressure

See Table 1 for details

Withstand voltage

See Table 1 for details

Use the temperature range

Ambient temperature range: -40 to 85℃

Integrated LCD display: -20～70℃

Temperature range: silicone oil-filled sensor-40-120℃ filled with inert filling fluid-45-160℃

Use humidity range

5%～100%RH@ 40℃

Storage temperature range

-40～110℃, integrated LCD display: -40～85℃

Levels of protection

IP67

Failure alarm signal

When the added pressure exceeds the upper and lower limit, the output alarm current value, the lower limit to 3.8mA and the upper limit to 20.8mA.

Accuracy

±0.025%, ±0.05%, ±0.075%, ±0.1% (see Table 2 for details)

Temperature characteristic

Total impact in-20 to 80℃: ±(0.1+0.1TD)% range upper limit

Time index

The total damping time constant is equal to the sum of the damping time constants of the electronic circuit component and the sensing membrane box. Damping time of electronic circuit components: 0～100S range adjustable. Damping time of the sensing membrane box: 0.2S.

Long-term stability

±0.15% upper range limit/10 years

Quick operation menu

Function	Explain
PV zero clearing	Make the current analog output corresponding to the zero pressure value
zero (point)adjustment	The actual output is 4mA using reference pressure
Full point adjustment	Reference pressure calibration of actual output to 20mA
Factory data reset	During a debugging error, restore the factory backup data

Material quality

Can provide a variety of anti-corrosion materials of the liquid connecting parts.

316L stainless steel, 316L stainless steel gold-plated, hab C, tntalum, Monnell, etc

O-type sealing ring material: nitrile rubber, fluorine rubber, PETE

Wiring box material: aluminum alloy exterior spraying epoxy resin

Flange, exhaust exhaust valve material: 316 stainless steel

Seal into the liquid

Silicone oil, inert filling fluid, etc

Pressure import interface

Inner thread 1 / 4-18 NPT

Distribution interface

M20*1.5 、1/2NPT

Weight

About 4kg

(excluding mounting bracket, process connection accessories)

Additional instructions

ATEX Explosion certification

Grade 1, zone 1 / 2, and Group G , Ex db IIC T6 Ga/Gb

-30℃≤Tamb≤+75℃Process temperature≤85℃

Grade 1, zone 1 / 2, Group G, and Ex db IIC T5 Ga/Gb

-30℃≤Tamb≤+80℃Process temperature≤100℃

Grade 1, zone 1 / 2, Group G, and Ex db IC T4 Ga/Gb

-30℃≤Tamb≤+80℃Process temperature≤110℃

Grade 1, zone 2, Group D, and Ex tb ⅢC T85℃ Db

-30℃≤Tamb≤+75℃Process temperature≤85℃

Grade 1, zone 2, Group D, and Ex tb ⅢC T100℃ Db

-30℃≤Tamb≤+75℃ Process temperature≤100℃

Grade 1, zone 2, Group D, and Ex tb ⅢICT110℃ Db

-30℃≤Tamb≤+75℃Process temperature≤110℃

（Note 1 to use a power cord suitable for working at a temperature 5℃ higher than the ambient temperature）

ATEX Intrinsic Safety Certification

Grade 1, zone 1, Group G, and Ex ia IIC T4 Ga

-30℃≤Tamb≤+60℃ Process temperature= 105℃

Electrical parameters：

Ui=30V,Li=93mA,Pi=1W,Ci=5nF,Li=0.5mH

Grade 1, Zone 1, Group D, Ex ia ⅢC T105℃ Da

-30℃≤Tamb≤+60℃ Process temperature=105℃

Group G Ex ic IC T4 Gc in level 3

-30℃≤Tamb≤+60℃ Process temperature=110℃

Electrical parameters：Ui=30V,Ci=5nF,Li=0.5mH

NEPSI explosion certification

Ex d IC T6 Gb; Ex tD A21 T85℃

-30℃≤Tamb≤+75℃ Process temperature=80℃

Ex d IC T5 Gb; Ex tD A21 T100℃

-30℃≤Tamb≤+80℃ Process temperature=95℃

Ex d IC T4 Gb; Ex tD A21 T115℃

-30℃≤Tamb≤+80℃ Process temperature=110℃

NEPSI Intrinsic Safety Certification

Ex ia IIC T4 Ga

-40℃≤ Tamb≤+60℃ Process temperature=105℃

Ex ia IIC T4 Gc

-40℃≤Tamb≤+60℃ Process temperature=105℃

Electrical parameters：

Ui=30V,Ii=100mA,Pi=1W,Ci=13nF,Li=0.5mH

（Use a power cord suitable for working at a temperature 5℃ higher than the ambient temperature）

IECEX explosion certification

Ex d IIC T6 Ga/Gb

-30℃≤Tamb≤+75℃ Process temperature≤85℃

Ex d IIC T5 Ga/Gb

-30℃≤ Tamb≤+80℃ Process temperature≤100℃

Exd IIC T4 Ga/Gb

-30℃≤Tamb≤+80℃ Process temperature≤110℃

Ex tb IIIC T85℃ Db

-30℃≤Tamb≤+75℃ Process temperature≤85℃

Ex tb IIIC T100℃ Db

-30℃≤Tamb≤+75℃ Process temperature≤100℃

Ex tb IIIC T110℃Db

-30℃≤Tamb≤+75℃ Process temperature≤110℃

（Note ：Use a power cord suitable for working at a temperature 5℃ above the ambient temperature）

IECEX Intrinsic safety certification

Ex ia IIC T4 Ga

-30℃≤Tamb≤+60℃ Process temperature=105℃

Electrical parameters:

Ui=30 V,Li=93mA,Pi=1W,Ci=5nF,Li=0.5mH

Ex ia IIIC T105℃ Da

-30℃≤Tamb≤+60℃ Process temperature=105℃

Ex ic IIC T4 Gc

-30℃≤Tamb≤+60℃ Process temperature=110℃

Electrical parameters: Ui=30V,Ci=5nF,Li=0.5mH

Electromagnetic compatibility (EMC)

EN 61326- 1:2013

EN 61326-2-3:2013

EN 61326-2-5:2013

Electromagnetic compatibility instruction: 2014 / 30 / EU

RoHS attestation

EN 50581:2012

EN 62321:2013

Debug method

HART hand operator, local button

The HART manipulator can configure almost all instrument parameters.

The local button can make various functional configurations of the transmitter: zero adjustment, setting the measuring upper and lower limits of addition, pressure and no pressure, unit selection, damping setting, output selection, etc。

Display interface

Identification	Explain
PV	The main screen displays process variables, the secondary screen displays percentage and progress bar.
mA	The main screen shows the current value, and the secondary screen shows the percentage and progress bar.
%	Home screen display percentage, secondary screen display percentage and progress bar.

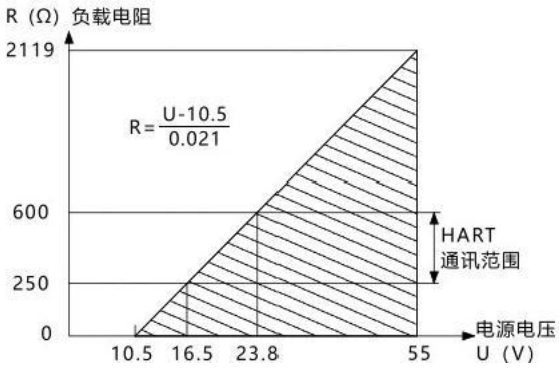


Figure 1. Power supply and load conditions

Maximum use pressure and pressure resistance

Range	Static pressure range	One-way high-pressure side overload	One-way LV side overload
6kPa	25MPa	25MPa	16MPa
40kPa	40MPa	25MPa	16MPa
250kPa	40MPa	25MPa	16MPa
1MPa	40MPa	25MPa	16MPa
3MPa	40MPa	25MPa	3MPa
10MPa	40MPa	25MPa	3MPa

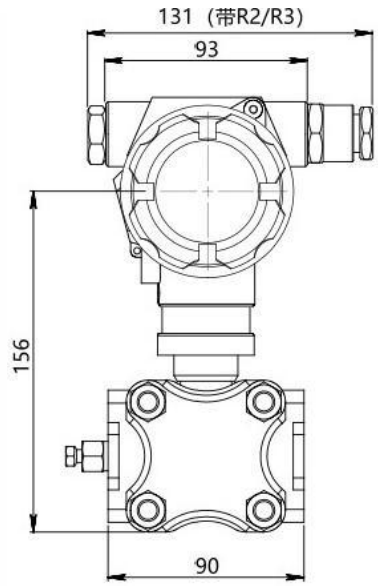
Table 1 Maximum use pressure and pressure resistance

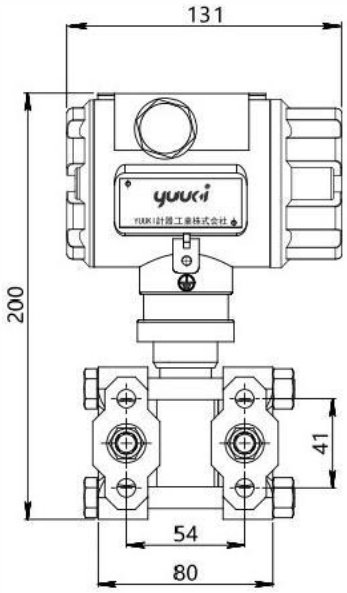
By standards, and test base conditions, including linear, sluggish, and repetitive. Calibration temperature: 20℃± 5℃	
Linear transmission and output accuracy	± 0.025%, if TD> 10 (Note 10), ± (0.0025 TD)%
	± 0.05%, ± (0.005 TD) if TD> 10%
	± 0.075%, ± (0.0075 TD)% if TD> 10
	± 0.1%, ± (0.01 TD) if TD> 10%
The square root output accuracy is 1.5 times the linear reference accuracy above	
Note 1: TD= max. range / regulatory range	

Table 2 refers to the accuracy

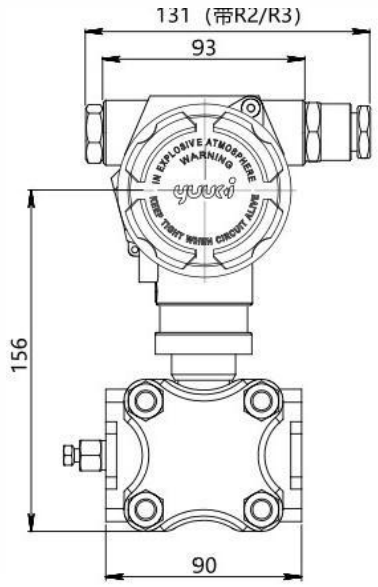
Overall dimension drawing (in mm)

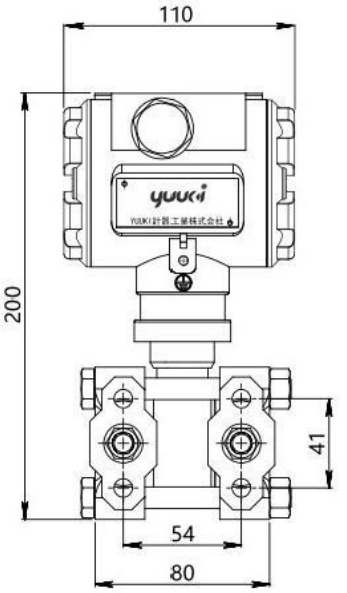
Overall size drawing with display function



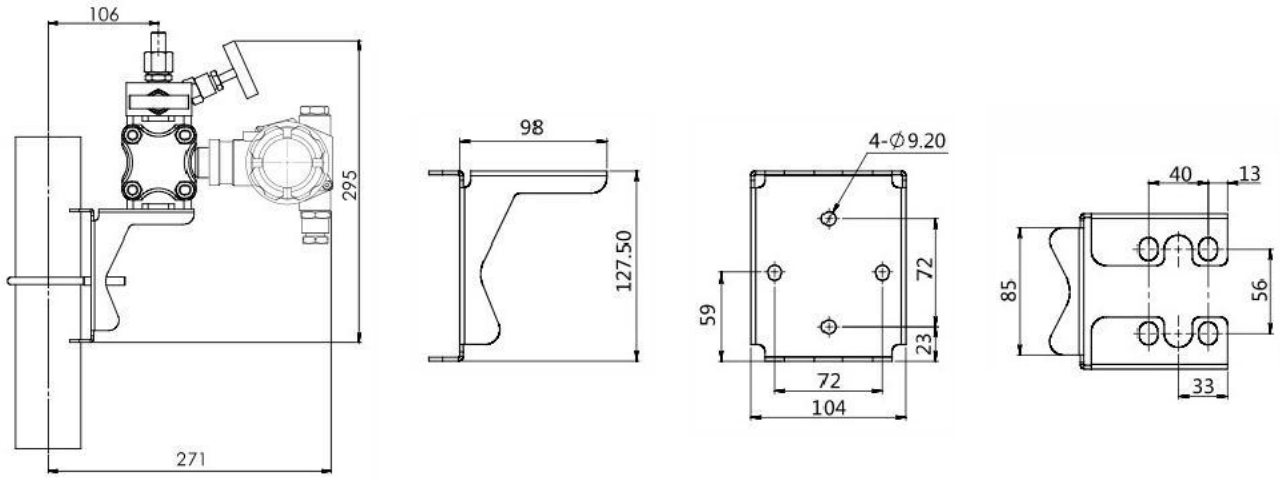


Size drawing of the whole machine without display function

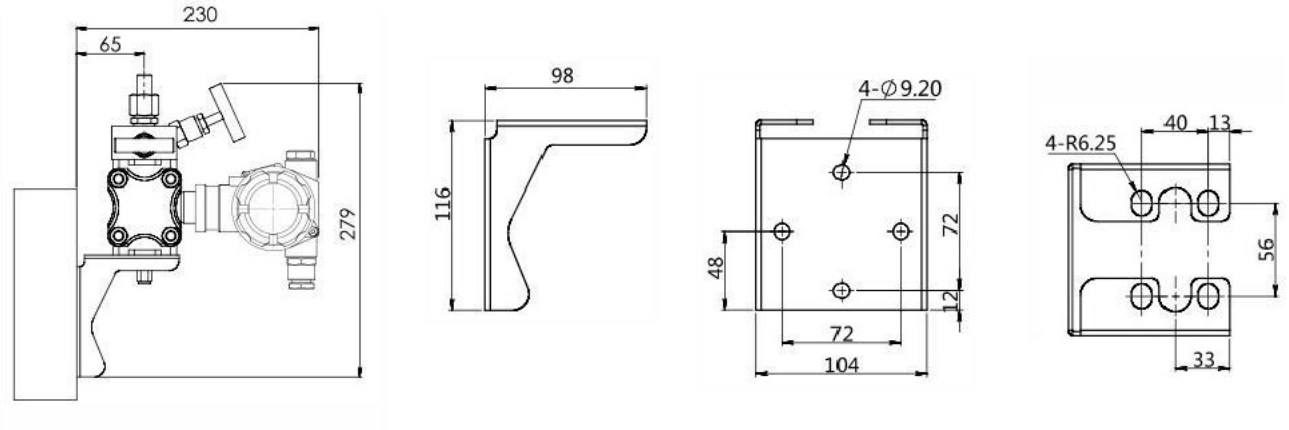




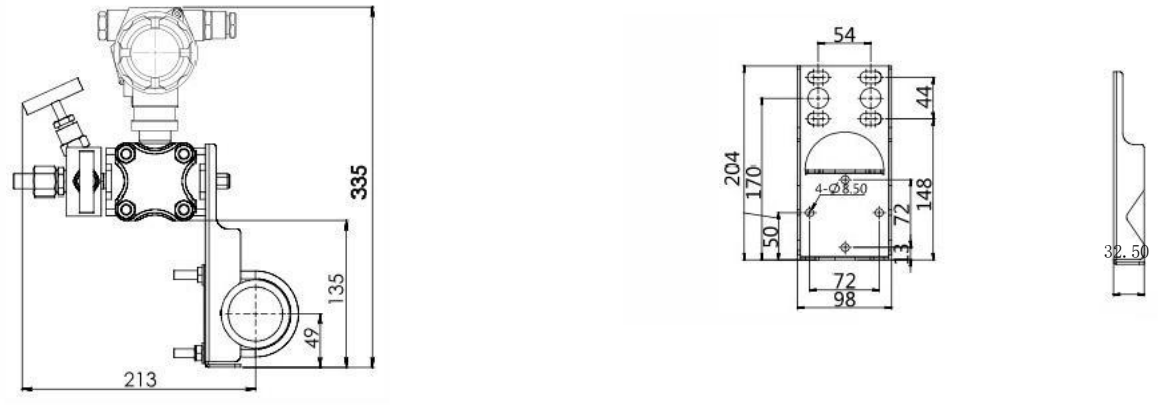
Installation dimensions of pipe bent bracket



Installation dimensions of plate bending bracket



Installation dimensions of flat bracket



Order number	Project	Code	Content
1	Model	JUN-E10	Differential pressure transmitter
2	Precision	A	±0.05%
		B	±0.075%
		C	±0.1%
		D	±0.025%
3	Range	G06	0～6kPa,Minimum range 200Pa(0～1kParange Please select the micro-differential pressure transmitter)
		G40	0～40kPa,Minimum range 400Pa
		G250	0～250kPa,Minimum range 2.5kPa
		G1K	0～1MPa,Minimum range 10kPa
		G3K	0～3MPa,Minimum range 30kPa
		G10K	0～10MPa,Minimum range 100kPa
4	Communication mode	H	4 ～ 20mA + HART, made in two lines
		P	PROFIBUS-PA (ask separately for delivery date)
		F	Basic field-bus (call separately)
5	Explosion-proof	N	No explosion-proof function
		G	PCEC explosion suppression
		D	NEPSI explosion suppression
		A	NEPSI Ben Ann
		E	ATEX explosion suppression
		B	ATEX Ben Ann
		M	IECEX explosion suppression
		W	IECEX Ben Ann
6	Display	N	No display
		L	LCD liquid-crystal display
		O	OLED display (ask later)
7	liquid joint diaphragm material	S	And 316L of stainless steel
		U	The 316L stainless steel is gold-plated
		H	Hastelloy C
		T	Ta
		M	Monnell

Order number	Project	Code	Content
8	Type O sealing ring material quality	N	Acrylonitrile-butadiene rubber
		F	Fluorine(-containing)rubber
		P	PTFE
9	Seal into the liquid	S	Silicone oil, applicable to the direct contact temperature range of-40 to 120℃
		D	Inert filling fluid for direct contact temperature range-45 to 160℃
10	Treatment of the solution site	0	No special treatment
		1	No oil treatment
		2	Water ban treatment
11	Pressure import connection	H1	Process connection internal thread 1 / 4-18 NPT, exhaust drain valve at the rear end of the flange
		H2	Process connection internal thread 1 / 4-18 NPT, exhaust drain valve is located at the lower side of the flange
		H3	Process connection internal thread 1 / 4-18 NPT, exhaust drain valve is located on the upper part of the flange side
		H4	Vertical mounting flange, process connection internal thread 1 / 4-18 NPT, exhaust drain valve is located on the side of the flange
12	Distribution connection	T1	Two M20 * 1.5 internal threads
		R1	Two M20 * 1.5 internal thread electrical interface, one side with M20 * 1.5 waterproof joint, the other side with PVC material plug
		R2	One side inner thread 1 / 2 NPT, the other side with stainless steel plug
		R3	One side internal thread M20 * 1.5, the other side with stainless steel plug
13	Additional options-Pressure-in connection accessories	-A1	Adapter M20 * 1.5 external thread and lead pipe Φ 14 * 2 * 30,304 stainless steel material
		-A2	Adapter 1 / 2-14 NPT inner thread, 304 stainless steel
14	Additional options-Fixed mounting fitting	-B1	2 ″ Pipe bending bracket
		-B2	Board bending bracket
		-B3	2 ″ Pipe flat bracket
		-B4	U-shaped bracket, 2 ″ tube mounting
15	Additional option-welded pipe joint	-C	1/2 NPT to Φ14welded pipe joint
16	Additional option-Valve set	-3	Three-valve group, 304 stainless steel material
		-4	Three-valve group, 316 stainless steel material
		-5	Five-valve group, 304 stainless steel material
		-6	Five-valve group, 316 stainless steel material
17	Additional option-Check the report	-Q2	Provide a nationally recognized third-party verification report

Matters need attention

To better perform the performance of the transmitter, please pay attention to the following before use and read the instructions.

Note for transmitter installation

Notice
When installing the transmitter, ensure that the sealing gasket is connected in the process, not from the transmitter to the process fluid (such as fitting flange connection, connecting pipe Lane, flange) connected prominent, if the sealing gasket protruding outside, may lead to liquid leakage and output errors. Do not use the transmitter beyond the specified pressure, temperature range and operating conditions of the product specification, otherwise it may cause the leakage of the product and cause serious accidents. When wiring in dangerous areas, please follow the operation method specified in the explosion-proof standard instructions.

Notice
Please do not stand on the installed transmitter, take it as a foot.foot may occur splash, causing fluid splash injury personnel. Be careful of the glass display, do not use tools to hit the glass part of the digital watch head, breaking the glass may cause body injury. The transmitter is heavy, please carefully install and wear safety shoes. The collision transmitter may damage the sensor module.

Wiring notice matters

Warning
To prevent a short circuit, please do not use wet hands or in a live state of the wiring work.

Notice
Please connect correctly according to the technical specification. Wrong wiring will cause instrument failure or irreparable damage. Please use the power supply that meets the technical specification. Using the inappropriate power supply can cause instrument failure or irreparable damage.

Use the HART protocol equipment notice matters

If the instrument is operated by the helper (HART Communicator, etc.), set the communication interval of the server (DCS, equipment management system) for more than 8 seconds, or stop the communication between the server and the instrument. If the server communicates with the instrument repeatedly within 8 seconds, the instrument may not accept the request of the helper (may not be able to communicate with the instrument)。

If the electrical noise interference in the surrounding environment affects the HART communication with the server, please take corresponding measures, such as separating the signal cable from the noise source, improving the grounding or replacing the signal shielding cable, etc. If an analog signal of 4-20mA is used, the use will not be affected even if the HART communication is disturbed by the noise。

△Read the operation manual carefully before using this product.

△Any change in appearance or specification due to improvement without notice.