

TECHNOLOGY

HOLYKELL®

HK7 Series
PRESSURE
• DATASHEET •

1. Pressure Measurement 2. Level Measurement 3. Temperature Measurement
4. Flow Measurement 5. Display & Control Instruments
6. Wireless Monitoring System 7. Velocity Measurement

HK7 Series Intelligent High-precision Monocrystalline Differential Pressure Transmitters



HK71



HK76



HK75



HK78(for negative pressure)



HK78(for normal pressure)

Profile

HK7 series intelligent pressure/differential pressure transmitters, the central sensing unit adopts the world's leading high-precision silicon pressure and differential pressure sensor technology and packaging process. The single crystal silicon pressure and differential pressure sensor is located at the top of the metal body, away from the contact surface of the medium. To achieve mechanical isolation and thermal isolation; The sensor lead of glass sintering unit realizes high-strength electrical insulation with the metal substrate, which improves the flexibility of electronic circuits and the ability to withstand transient voltage protection. The circuit adopts a modular design with a microprocessor as the core and assisted by advanced digital isolation technology, so that the instrument has extremely high anti-interference and stability.

The Hart protocol is used for communication, which can be remotely operated through a Hart handheld communicator or a computer installed with Hart software to complete the measurement information configuration. At the same time, the digital compensation technology is used, and the transmitter is compensated through the built-in temperature sensor to improve the accuracy, temperature drift is reduced and features good long-term stability and high reliability. The most user-friendly design of the external one-key reset function meets the requirements of safe operation in hazardous situations. The shortcut menu is convenient for operation, and can complete all parameter settings, which comprehensively improves the performance of the transmitter.

Features

- ◇Advanced monocrystalline silicon pressure sensor technology and packaging technology adopted;
- ◇Modularization design with microprocessor as the core and assisted by advanced digital isolation technology, which makes it with high anti-interference and stability;
- ◇Powerful 24-bit ADC achieves high precision;
- ◇Innovative dual compensation technology, 0.075% high precision.

Function Parameters

Range limit	Within the upper and lower limits of the measuring range, it can be adjusted arbitrarily. It is recommended to select a range code with the lowest possible turndown ratio to optimize performance
Zero point setting	Zero point and range can be adjusted to any value within the measurement range in the table, as long as: calibration range \geq minimum range
Influence of installation location	The change of the installation position perpendicular to the diaphragm surface will not cause the zero drift effect. If the installation position and the diaphragm surface change more than 90°, the zero position in the range of <0.4kPa will be affected. It can be adjusted by adjusting the zero and there is no impact on the range.
Output	Two-wire system 4-20mA, in line with NAMIR NE43 specification, superimposed digital signal (Hart protocol) Linear or square root output is optional.
Output signal limit	$I_{min}=3.9mA$, $I_{max}=21.0mA$
Fault warning	If the sensor or circuit fails, the automatic diagnosis function will automatically output 3.9 or 21.0mA (user can pre-set)
Alarm current	Low alarm mode (minimum): 3.9mA
High report mode (maximum)	21 mA
Alarm current default setting	High alarm mode
Response time	The damping constant of the amplifier component is 0.1s; the time constant of the sensor is 0.1 to 1.6s, depending on the range and the range ratio. The additional adjustable time constant is: 0~100s
Preheating time	<15s

Performance Parameters

Measuring medium	Gas, steam, liquid
Accuracy	±0.2%,±0.075%,±0.1%(Including linearity, hysteresis and repeatability from zero)
Stability	±0.1%/3 years
Ambient temperature influence	≤±0.04%URL/10°C
Influence of static pressure	±0.05%/10MPa
Power supply	10~36Vdc(24Vdc recommended)
Power influence	±0.001%/10V (10~36Vdc), which can be negligible
Ambient temperature	-40°C ~85°C
Measuring medium temperature	-40°C~120°C
Storage temperature	-40°C ~105°C
Display	LCD, OLED
Module temperature shown on display	-20°C~70°C (LCD), -40°C~80°C (OLED)
Explosion-proof rating	Exd II CT6, Exia II CT4
IP Rating for Housing	IP65(HK71); IP67(HK75, HK76, HK78)

Overload and static pressure

	Range	Unilateral overload (negative end)	Unilateral overload (positive end)	Bilateral static pressure
A	1KPa	16MPa	16MPa	40MPa
B	6KPa	16MPa	16MPa	40MPa
C	40KPa	25MPa	25MPa	40MPa
D	400KPa	25MPa	25MPa	40MPa
E	4MPa	25MPa	25MPa	40MPa

HK71 Smart Direct-mounted Gauge Pressure/Absolute Pressure Transmitter

Gauge pressure range and range

Range code	Measuring range(KPa)	Accuracy/Stability
A	-6~6	±0.075%F.S of the range/ The maximum error per year is ±0.1% of range
B	-40~40	
C	-100~100	
D	-100~400	
E	-100~4000	
F	-100~40000	



Absolute pressure range and range

Range code	Measuring range(KPa)	Accuracy/Stability
A	0~40	±0.075%F.S of the range/ The maximum error per year is ±0.1% of range
B	0~250	
C	0~2000	

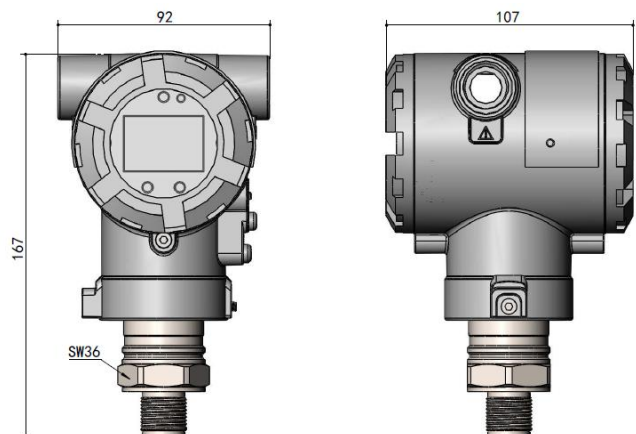
Gauge pressure overload limit

Range	1KPa A	6KPa B	40KPa C	100KPa D	400KPa E	4000KPa F	40000KPa G
Load limit	1MPa	2MPa	5MPa	7MPa	9MPa	10MPa	50MPa

Absolute pressure overload limit

Range	40KPa A	250KPa B	2000KPa C
Load limit	1MPa	4MPa	10MPa

Dimensions



How to Order

Code	Type							
GP	Smart Pressure Transmitter							
AP	Smart Absolute Pressure Transmitter							
	Code	Gauge Pressure Range (KPa)			Absolute Pressure Range (KPa)			
	A	0~1~6			0~6~40			
	B	0~6~40			0~40~250			
	C	0~40~100			0~250~2000			
	D	0~100~400						
	E	0~400~4000						
	F	0~4000~40000						
	Code	Output signal						
	H	4~20mA						
	S	4~20mA+Hart						
	Code	Display						
	M1	LCD						
	M2	OLED(Low temperature resistant -40°C)						
	Code	Process Connection						
	C1	M20×1.5 male						
	C2	G1/2" male						
	C3	G1/4" male						
	C4	1/2" NPT male						
	C5	1/2" NPT female						
	T	Special request						
	Code	Hazardous location certification (do not fill in for ordinary type)						
	E0	Non-explosion proof						
	E1	Flameproof, Exd II CT6						
	12	Intrinsically safe, Exia II CT4						
	Code	Electrical connection						
	D1	M20×1.5						
	D2	User specified						
	Code	Special requirement						
	T	User specified						
GP	A	H	M1	C1	E1	D1	T	Model No. example

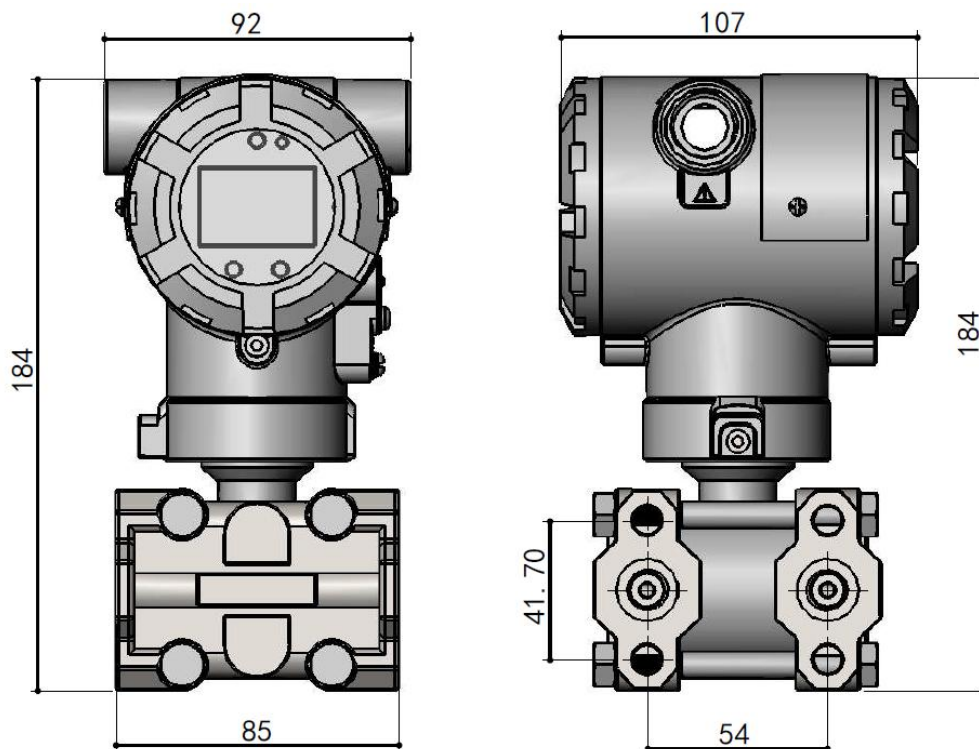
HK75 Intelligent High-precision Monocrystalline Differential Pressure Transmitter

Measuring Range

Range code	Measuring range(KPa)	Accuracy/Stability
A	-1~1	±0.075%F.S of the range; The maximum error per year is ±0.1% of range
B	-6~6	
C	-40~40	
D	-100~100	
E	-100~400	
F	-100~4000	



Dimensions



How to Order

Code	Type									
DP	Smart Differential Pressure Sensor									
	Code	DP Range (KPa)								
	A	0~0.2~1								
	B	0~1~6								
	C	0~6~40								
	D	0~40~100								
	E	0~100~400								
	F	0~400~4000								
		Code	Output Signal							
		H	4~20mA							
		S	4~20mA+Hart							
		J	Square root 4~20mA							
		Code	Display							
		M1	LCD							
		M2	OLED(Low temperature resistant -40°C)							
			Code	Pressure Connection						
			C0	NPT1/4 + Φ14						
			C1	NPT1/2						
			C2	M20×1.5						
			C3	Integrated three valve group						
				Code	Structure material					
					Flange	Drain/exhaust		Diaphragm		
				21	304 SS	304 SS		316 SS		
				22	316 SS	316 SS		316 SS		
				23	316 SS	316 SS		Hastelloy C		
				24	316 SS	316 SS		Monel alloy		
				25	316 SS	316 SS		Tantalum		
				26	Hastelloy C	Hastelloy C		Hastelloy C		
				27	Hastelloy C	Hastelloy C		Tantalum		
				28	Monel alloy	Monel alloy		Monel alloy		
					Code	Relief valve				
					X0	Vent valve				
					X1	Drain valve				
						Code	Mounting bracket			
						B0	Without mounting bracket			
						B1	Tube bending bracket			
						B2	Board-mounted bending bracket			
						B3	Tube mounted flat bracket			
							Code	Hazardous location certification		
							E0	No explosion-proof		
							E1	Flame-proof, Exd II CT6		
							E2	Intrinsically safe, Exia II CT4		
								Code	Electrical connection	
								D1	M20×1.5	
								D2	User specified	
DP	A	H	M1	C1	21	X0	B1	E1	D1	Model No. Example

HK76 Intelligent Monocrystalline Flat Diaphragm/Cylinder Flange Liquid Level Transmitter



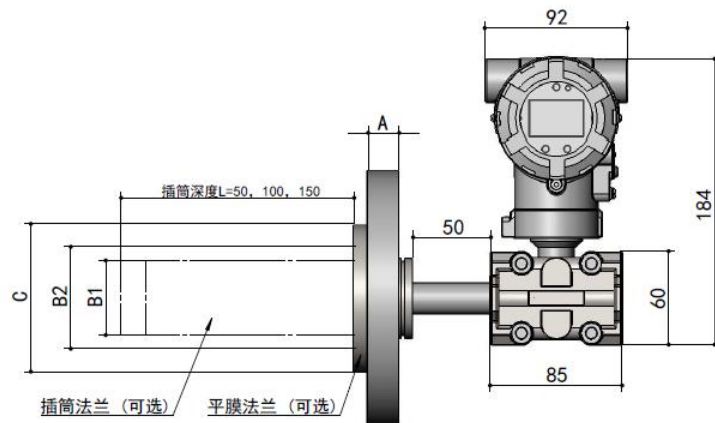
Measuring Range

Range code	Min Range(KPa)	Max Range(KPa)	Rated pressure (maximum)
B	1	6	Rated pressure of liquid level flange
C	6	40	
D	40	400	
E	400	4000	

Comparison of relationship between flange and min range

Liquid level flange	Nominal diameter	Minimum range
Flat Diaphragm type	DN 50/2"	10KPa
	DN 80/3"	1KPa
	DN 100/4"	1KPa
Cylinder	DN 50/2"	16KPa
	DN 80/2"	1KPa
	DN 100/4"	1KPa

Dimensions



How to Order

Code	Type					
LT	Intelligent Flat Diaphragm Flange Liquid Level Transmitter					
CT	Intelligent Cylinder Flange Liquid Level Transmitter					
	Code	Pressure Measuring Range(KPa)				
	B	1~6				
	C	6~40				
	D	40~400				
	E	400~4000				
	Code	Output Signal				
	H	4~20mA				
	S	4~20mA+Hart				
	Code	Display				
	M1	LCD				
	M2	OLED (Low temperature resistant -40°C)				
	Structure material					
	Code	Flange Material	Code	Diaphragm	Code	Coating
	22	304SS	N1	316L SS	T1	None
	23	316SS	N2	Hastelloy C	T2	PTFE
			N3	Monel alloy		
			N4	Tantalum		
			N5	Titanium		
	Code	Mounting Dimensions				
	C1	DN50				
	C2	DN80				
	C3	DN100				
	C4	2"				
	C5	3"				
	C6	4"				
	C7	User specified				
	Code	Cylinder length (mm)				
	L10	0(Flat flange)				
	L11	50				
	L12	100				
	L13	150				
	LT	User specified				
	Code	Capillary length (m)				
	F0	None				
	F1	1m				
	F2	2m				
	F3	3m				
	F4	User specified				
	Code	Mounting bracket				
	A1	Without mounting bracket				
	A2	Tube bending bracket				
	A3	Board-mounted bending bracket				
	A4	Tube mounted flat bracket				
	Code	Hazardous location certification (do not fill in for ordinary type)				
	E0	No explosion-proof				
	E1	Flameproof, Exd II CT6				

									E2	Intrinsically safe, Exia II CT4	
										Code	Electrical connection
										D1	M20×1.5
										D2	User specified
LT	B	H	M1	22	C1	L10	F1	A1	E0	D1	Model No. Example

HK78 Intelligent Monocrystalline Dual-remote Flat Diaphragm/Cylinder Flange Liquid Level Transmitter



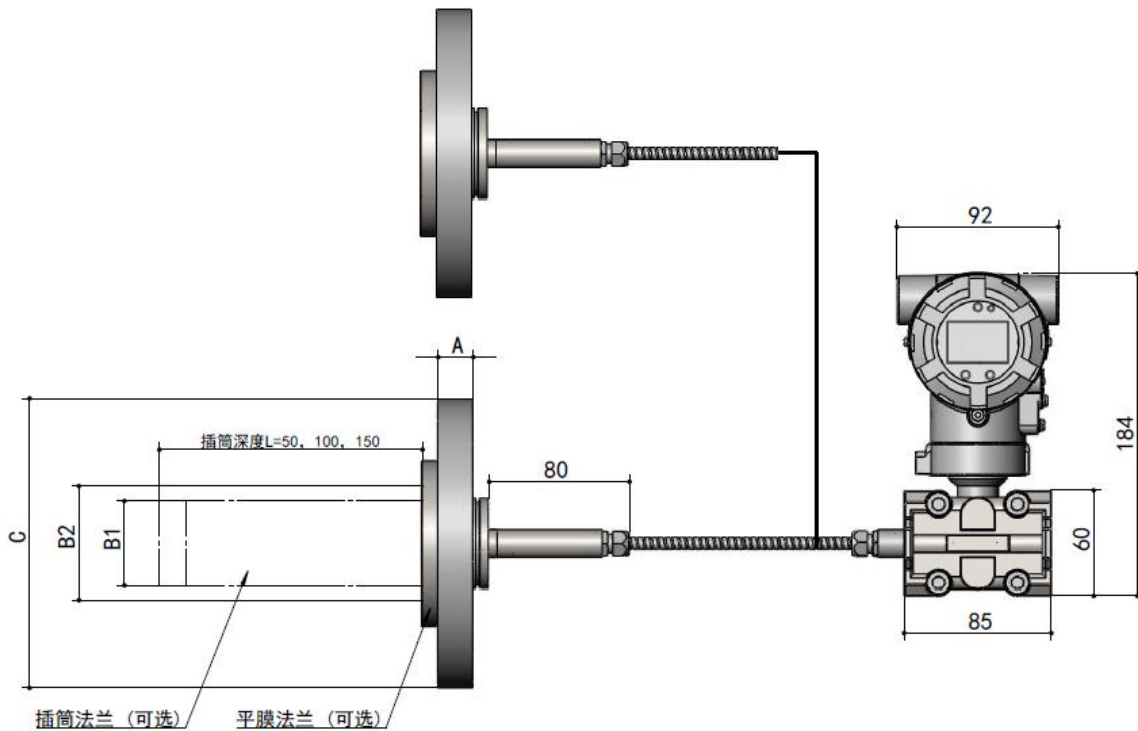
Measuring Range

Range code	Min Range(KPa)	Max Range(KPa)	Rated pressure (max)
B	1KPa	6KPa	Rated pressure of liquid level flange
C	6KPa	40KPa	
D	40KPa	400KPa	
E	400KPa	4MPa	

Comparison of relationship between flange and min range

Flange	DN	Min range	
		Unilateral remote transmission	Bilateral remote transmission
Flat Diaphragm	DN 50/2"	10KPa	10KPa
	DN 80/3"	6KPa	1KPa
	DN 4"	6KPa	1KPa
Cylinder	DN 50/2"	10KPa	10KPa
	DN 80/2"	6KPa	1KPa
	DN 4"	6KPa	1KPa

Dimensions



How to Order

Code	Type					
DY	Intelligent remote differential pressure transmitter					
GY	Intelligent remote pressure transmitter					
	Code	Pressure measurement range(KPa)				
	B	1~6				
	C	6~40				
	D	40~250				
	E	250~4000				
	Code	Output				
	H	4~20mA				
	S	4~20mA+Hart				
	Code	Display				
	M1	LCD				
	M2	OLED(Low temperature resistant -40°C)				
	Structure material					
	Code	Flange Material	Code	Diaphragm material	Code	Coating
	22	304 SS	N1	316L SS	T1	None
	23	316 SS	N2	Hastelloy C	T2	PTFE
			N3	Monel alloy		
			N4	Tantalum		
			N5	Titanium		
			N6	PTFE sprayed		
	Code	Mounting Dimensions				
	C1	DN50				
	C2	DN80				
	C3	DN100				
C4	2"					
C5	3"					
C6	4"					
C7	User specified					
Code	Remote transmission device					
Y0	Single flat flange type					
Y1	Double flat flange type					
Y2	Single cylinder flange type					
Y3	Double- cylinder flange type					
Y4	One flat one cylinder flange type					
Code	Capillary length					
X0	1m					
X1	2m					
X2	3m					
X3	User specified					

									Code	Cylinder length (mm)		
									10	0(Flat flange)		
									11	50		
									12	100		
									13	150		
									T	User specified		
										Code	Mounting bracket	
										B0	Without mounting bracket	
										B1	Tube bending bracket	
										B2	Board-mounted bending bracket	
										B3	Tube mounted flat bracket	
											Code	Hazardous location certification (do not fill in for ordinary type)
											E0	None explosion-proof
											E1	Flameproof, Exd II CT6
											E2	Intrinsically safe, Exia II CT4
											Code	Electrical connection
											D1	M20×1.5
											D2	User specified
DY	B	H	M1	22 N1 T1	C1	Y0	X0	10	B0	E0	D1	Model No. Example