

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



HK75



HK76



HK78

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	Imin=3.9mA, Imax=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%/10°C
Influence of static pressure	±0.05%/10MPa
Power supply	12-36 V DC(24 V DC recommended)
Power influence	±0.001%/10 V, which can be negligible
Ambient temperature	-40°C ~85°C
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)
IP Rating for Housing	IP67

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	-100~16000	



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	

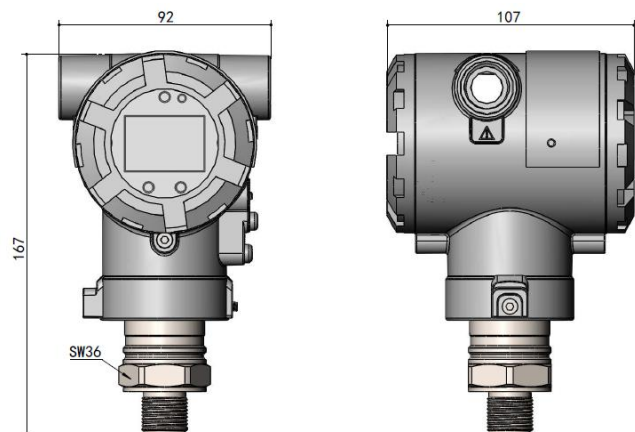
Gauge pressure overload limit

Range	1KPa A	6KPa B	40KPa C	100KPa D	400KPa E	4000KPa F	16000KPa G
Load limit	1MPa	2MPa	5MPa	7MPa	9MPa	10MPa	25MPa

Absolute pressure overload limit

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

Dimensions



How to Order

HK71				
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	0~4000~16000		
	Code	Output signal		
	H	4~20mA		
	S	4~20mA+Hart		
	Code	Accuracy		
	J1	±0.2%		
	J2	±0.1%		
	J3	±0.075%		
	Code	Display		
	M1	LCD		
	M2	OLED (Low temperature resistant -40℃)		
	Code	Structure material		
		Pressure Connector	Diaphragm	
	21	316 SS	316 SS	
	22	316 SS	Hastelloy C alloy	
	23	316 SS	Monel	
	24	316 SS	Tantalum	
	25	316 SS	Tantalum	
	26	316 SS	With gold plating	
		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	Electrical connection	
						D1	M20×1.5	
D2	1/2 NPT female							
	Code	Filling fluid						
	G1	Silicone oil						
	G2	Fluoro oil						
	Code	Mounting bracket						
	B0	Without mounting bracket						
B1	Tube bending bracket							
GP	A	H J1	M1 21	C1	E1	D1	G1 B0	Model No. example

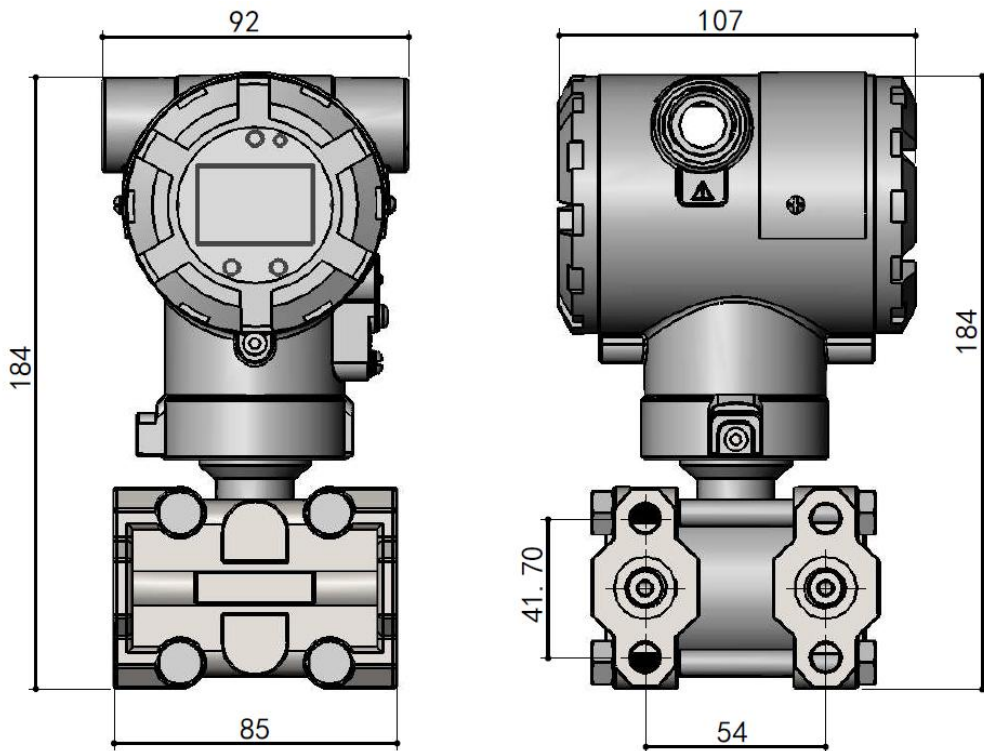
HK75 Intelligent High-precision Monocrystalline Differential Pressure Transmitter

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

HK75			
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
		Code	Accuracy
		J1	±0.2%
		J2	±0.1%
		J3	±0.075%
			Code Display
			M1 LCD

			M2	OLED(Low temperature resistant -40℃)						
				Code	Pressure Connection					
				C0	NPT1/4 pressure connector & rear welded ∅ 14 pressure connector tube					
				C1	NPT 1/2 tapered female flange with waist-shaped thread					
				C2	T-shaped male connector with M20*1.5					
				C3	Integrated three valve group					
				Code	Filling fluid					
				G1	Silicone oil					
				G2	Fluoro oil					
					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 alloy	
					24	316 SS	316 SS		Monel alloy	
					25	316 SS	316 SS		Tantalum	
					26	Hastelloy C alloy	Hastelloy C alloy		Hastelloy C alloy	
					27	Hastelloy C alloy	Hastelloy C alloy		Tantalum	
					28	Monel alloy	Monel alloy		Monel alloy	
				29	304 SS	304 SS		With gold plating		
					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	Electrical connection	
								D1	M20×1.5	
			D2	1/2 NPT female						
			DP	A	H J1	M1	C1 G1	21	X0	B1

HK76 Intelligent Monocrystalline Flat Diaphragm/Cylinder Flange Liquid Level Transmitter

Measuring Range

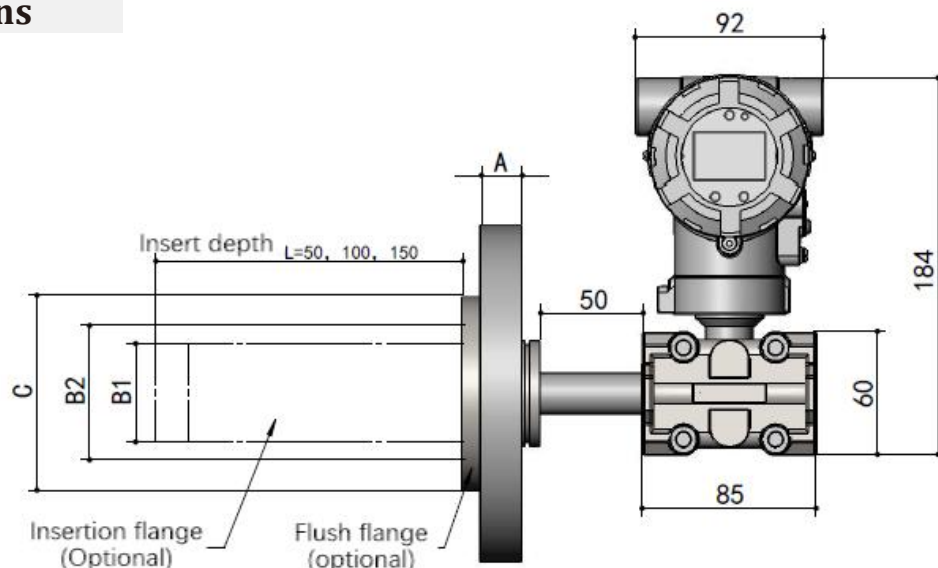
Range code	Min Range(KPa)	Max Range(KPa)	Rated pressure (maximum)
B	1	6	Rated pressure of liquid level flange
C	6	40	
D	40	400	
E	400	4000	



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

HK76															
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℃)										
					Code	Accuracy									
					J1	±0.5%									
					J2	±0.2%									
					J3	±0.1%									
					J4	±0.075%									
					Structure material										
					Code	Flange		Code	Diaphragm		Code	Coating			
					22	304SS		N1	316L SS		T1	None			
				23	316SS		N2	Hastelloy C		T2	PFA				
							N3	Monel alloy							
							N4	Tantalum							
							N5	Titanium							
							Code	Flange 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			Cylinder material				

							Z0	None			
							Z1	304 SS			
							Z2	316L SS			
							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	Filling fluid		
								G1	Silicone oil		
								G2	Fluoro oil		
										Code	Electrical connection
										D1	M20×1.5
										D2	1/2 NPT female
LT	B	H	M1	J1 22 N1 T1	C1	L10	Z0 F1	A1 G1	E0	D1	Model No. Example

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



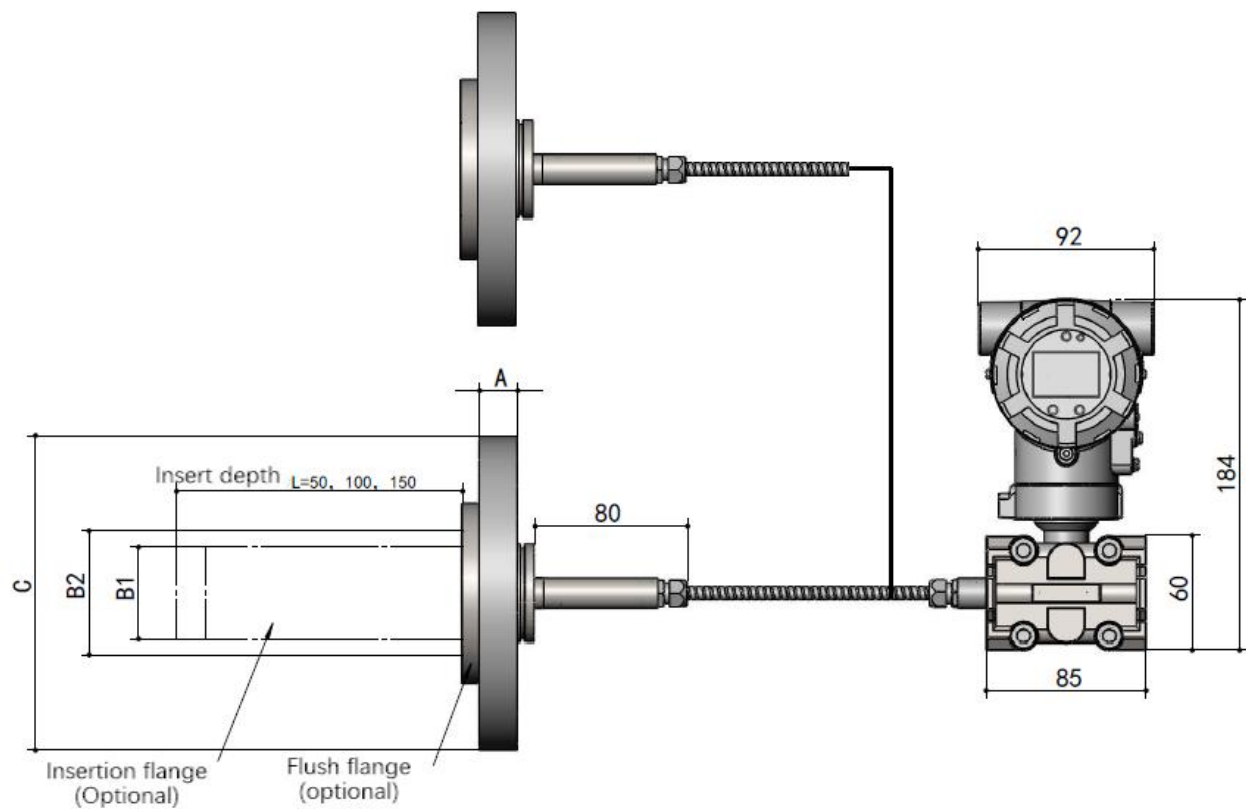
Measuring Range

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

HK78										
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	Accuracy							
		J1	±0.2%							
		J2	±0.1%							
		J3	±0.075%							
			Code	Display						
			M1	LCD						
			M2	OLED(Low temperature resistant -40℃)						
				Structure material						
				Code	Flange	Code	Diaphragm	Code	Coating	
				22	304 SS	N1	316L SS	T1	None	
				23	316 SS	N2	Hastelloy C alloy	T2	PFA	
						N3	Monel alloy			
						N4	Tantalum			
						N5	Titanium			
					Code	Flange 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					
							High pressure side			Low pressure side			
							XN	None	L0		1m		
							X0	1m	L1		2m		
							X1	2m	L2		3m		
							X2	3m	LX		User specified		
							X3	User specified					
							Code	Filling fluid					
							G1	Silicone oil					
							G2	Fluoro oil					
								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	Electrical connection	
											D1	M20×1.5	
											D2	1/2 NPT female	
DY	B	H	M1	22 N1 T1	C1	Y0	X0 L0 G1	10	B0	E0	D1	Model No. Example	