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 ≥ 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%URL/10℃
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℃ ~85℃
Measuring medium temperature	-40℃~120℃
Storage temperature	-40℃ ~105℃
Display	LCD, OLED
Module temperature shown on display	-20℃~70℃ (LCD), -40℃~80℃ (OLED)
Explosion-proof rating	Exd Ⅱ CT6, Exia Ⅱ CT6
IP Rating for Housing	IP67

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	-100~16000	

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	

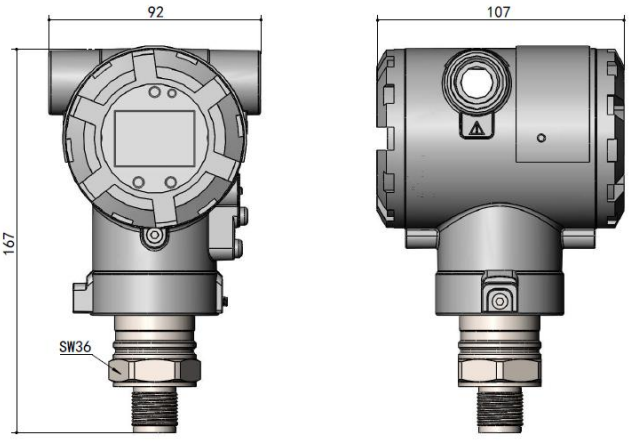
Gauge pressure overload limit

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

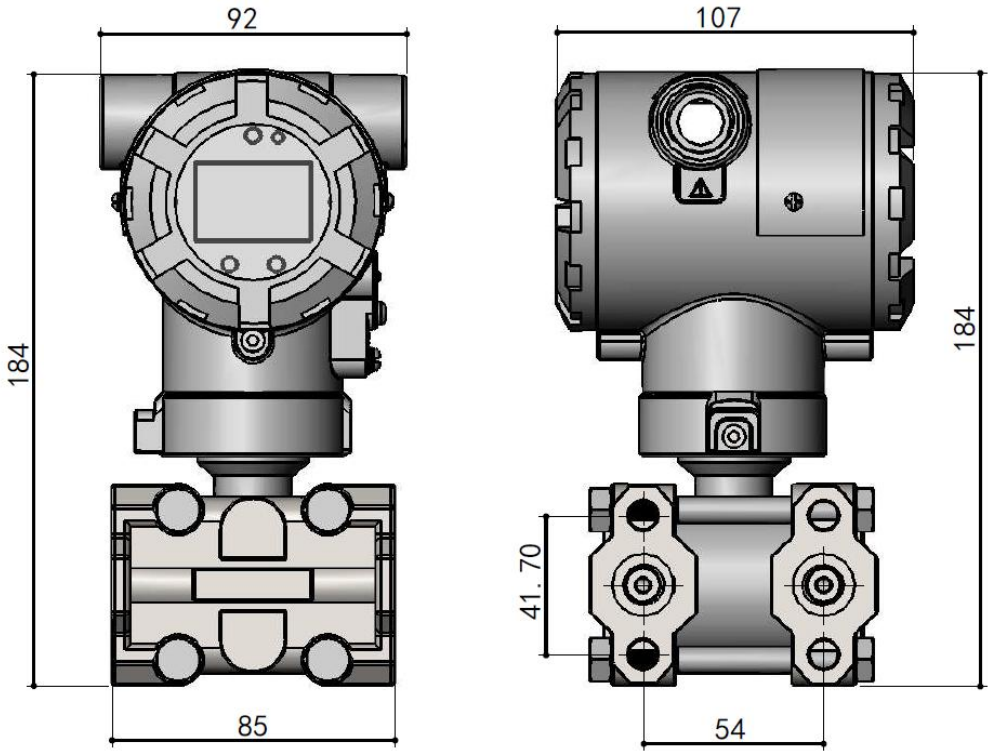
				C5	1/2 NPT female			
				T	Special request			
					Code	**Hazardous location certification**		
					E0	No explosion-proof		
					E1	Flame-proof, Exd Ⅱ CT6		
					12	Intrinsically safe, Exia Ⅱ CT6		
						Code	**Electrical connection**	
						D1	M20×1.5	
						D2	1/2 NPT female	
							Code	**Filling 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	**Hazardous location certification**	
								E0	No explosion-proof	
								E1	Flame-proof, Exd Ⅱ CT6	
								E2	Intrinsically safe, Exia Ⅱ CT6	
									Code	**Electrical connection**
									D1	M20×1.5
									D2	1/2 NPT female
DP	A	H J1	M1	C1 G1	21	X0	B1	E1	D1	Model No. Example

HK76 Intelligent Monocrystalline Flat Diaphragm/Cylinder Flange Liquid Level Transmitter

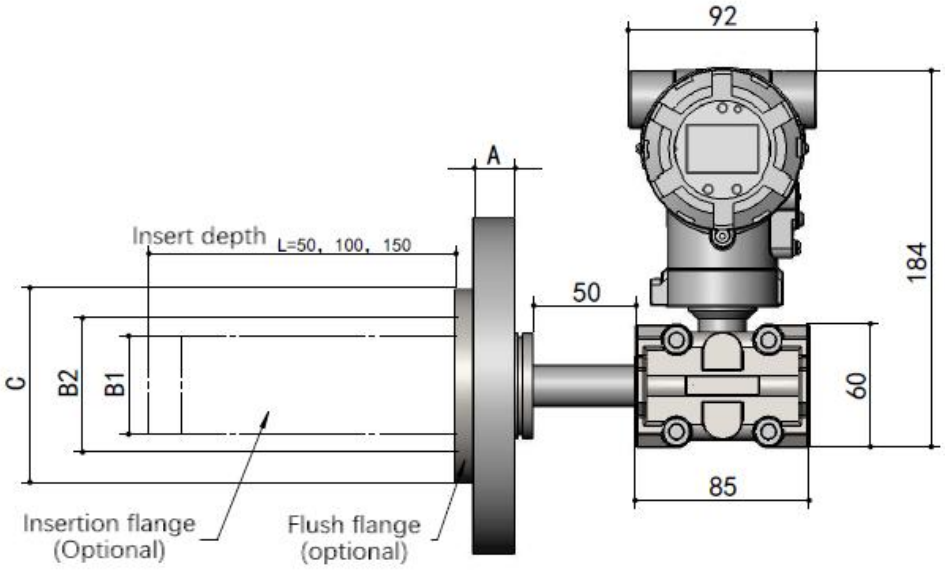
Measuring Range

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

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	**Hazardous location certification**	
									E0	No explosion-proof	
									E1	Flameproof, Exd Ⅱ CT6	
									E2	Intrinsically safe,Exia Ⅱ CT6	
										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

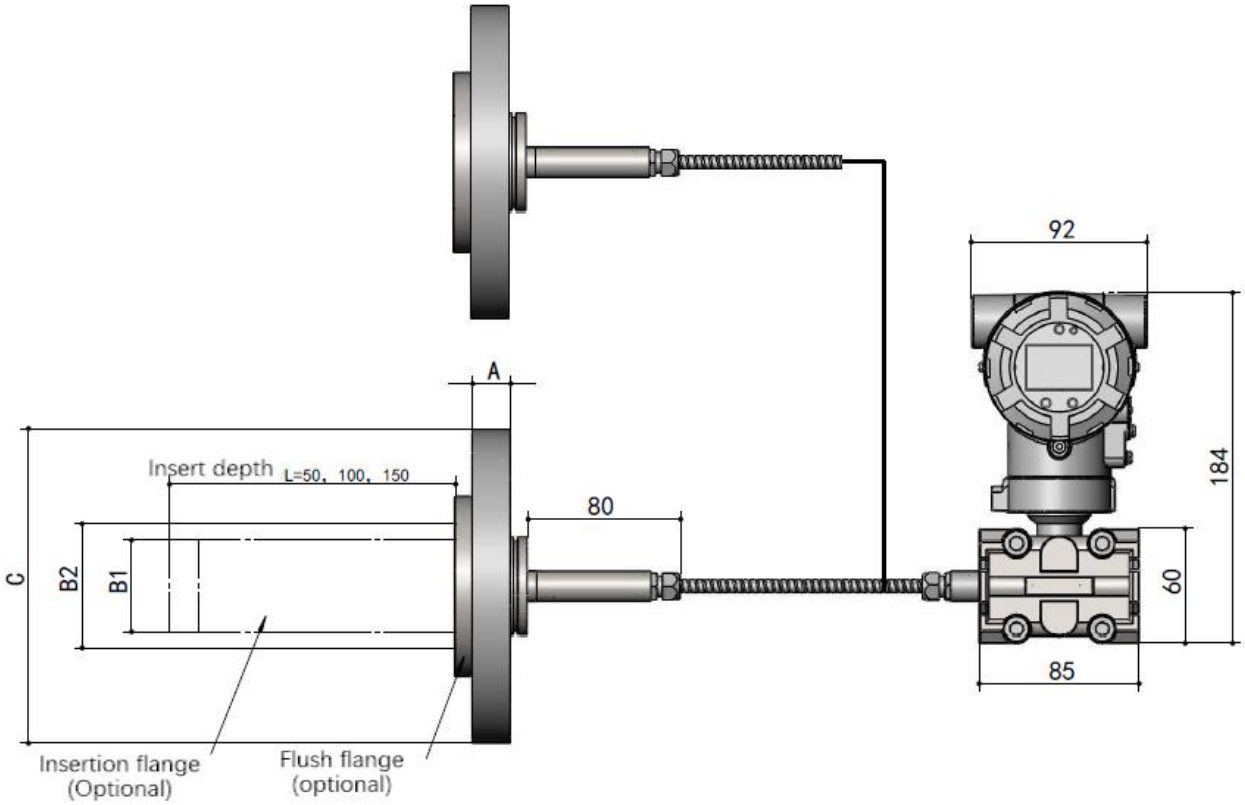
Measuring Range

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


92
A
184
Insert depth L=50, 100, 150
80
C
B2
B1
60
85
Insertion flange
(Optional)
Flush flange
(optional)

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°C)				
				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		

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						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	**Hazardous location certification**	
										E0	Non-explosion proof	
										E1	Flameproof, Exd Ⅱ CT6	
										E2	Intrinsically safe, Exia Ⅱ CT6	
											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

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