

# Compact High Precision Pressure Transducer



measuring  
•  
monitoring  
•  
analyzing

KPK



- Advanced Thin-Film or Piezoresistive Sensing Technology
- Outputs: 4-20 mA, 0-5 VDC or 0-10 VDC
- CE EMI Compliant
- High Overpressure Protection
- Fast Response Time
- Stainless Steel Construction
- Easy to Use Hirschmann DIN Connector



KOBOLD companies worldwide:

ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, CZECH REPUBLIC, EGYPT, FRANCE, GERMANY, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, ROMANIA, SINGAPORE, SPAIN, SWITZERLAND, TAIWAN, THAILAND, TUNISIA, TURKEY, UNITED KINGDOM, USA, VIETNAM

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## Compact, High Precision Pressure Transducer Model KPK

### Description

The KOBOLD KPK Compact Pressure Transducer is designed to deliver high performance at an economical price. Utilizing either thin-film or piezoresistive technologies, the KPK series offers precision, shock resistance, and long term sensor stability. Noise immunity is assured by compliance with the IEC 801 standard (CE compliant). Installation is simplified by providing protection against common installation mistakes such as reverse polarity wiring, overvoltage and short circuiting. All KPK sensors undergo inspection and testing to assure a trouble-free installation.

### Applications:

- Hydraulic and Pneumatic Systems
- Industrial Machinery and Machine Tools
- Injection Molding Machines
- Stamping and Forming Processes
- Pumps and Compressors
- Laboratory and Test Equipment
- HVAC Systems
- Refrigeration Equipment
- Petrochemical

### Technical Specifications

**Pressure Ranges:** -30...0" Hg to 0...15,000 PSIG,  
0...15 PSIA to 0...300 PSIA

#### Accuracy

(Includes the effects of non-linearity, hysteresis, non-repeatability, zero point and full scale errors)

**Standard:**  $\pm 0.5\%$  of Full Scale BFSL

**Optional:**  $\pm 0.25\%$  of Full Scale BFSL

**Stability:**  $< \pm 0.2\%$  of Full Scale for 1 year,  
Non-Accumulating

**Process Connection:** 1/4" Male NPT or SAE J1926-3:7/16-20  
Adjustable

#### Materials of Construction

##### Wetted Parts:

**Measuring Element:** 316 Stainless Steel ( $\leq 300$  PSIG)  
17-4PH Stainless Steel ( $\geq 500$  PSIG)

**Connection:** 316 Stainless Steel

**Housing:** 316 Stainless Steel

#### Temperature Specs

**Compensated:** 32...176 °F

**Drift:**  $\pm 0.017\%$  Full Scale/°F for Zero and Span

**Media:** -22...212 °F

**Ambient:** -40...185 °F

**Storage:** -40...212 °F



### Pressure Limitations

#### 0...5 PSIG to 0...200 PSIG

**Proof Pressure:** 3x range

**Burst Pressure:** 3.8x range

#### 0...300 PSIG to 0...10,000 PSIG

**Proof Pressure:** 1.75x range

**Burst Pressure:** 4x range

#### 0...15,000 PSIG

**Proof Pressure:** 1.5x range

**Burst Pressure:** 3x range

### Adjustability:

$\leq \pm 10\%$  Full Scale for Zero and Span

### Response Time:

$< 1$  ms (10-90% Full Scale)

### Service Life:

$> 100,000,000$  Load Cycles

### Output:

4-20 mA, 2-wire

0-5  $V_{DC}$ , 3-wire

0-10  $V_{DC}$ , 3-wire

### Input Power:

10-30  $V_{DC}$  (4-20 mA, 0-5  $V_{DC}$ )

14-30  $V_{DC}$  (0-10  $V_{DC}$ )

### Load Limitations:

**4-20 mA:**  $\leq (V_{power\ Supply} - 10)/0.020$  Amp

**0-5  $V_{DC}$ :**  $\geq 5,000 \Omega$

**0-10  $V_{DC}$ :**  $\geq 10,000 \Omega$

### Shock Sensitivity:

1000g according to IEC 60068-2-27

### Vibration Sensitivity:

20g according to IEC 60068-2-6

### Protection

**Environmental:** IP65

**Electrical:** Reverse Polarity, Overvoltage and Short Circuit

### Electromagnetic Rating:

CE Compliant to EMC Norm

EN 61326:1997/A1:1998

RFI, EMI, and ESD Protection

### Weight:

3.5 oz. Approx.



**Order Details** (Example: **KPK-005001127D**)

Model	Pressure Range			
KPK-	..0030V.. = -30"Hg...0 PSIG	..00010.. = 0...10 PSIG	..00600.. = 0...600 PSIG	..10000.. = 0...10000 PSIG
	..30/15.. = -30" Hg...15 PSIG	..00015.. = 0...15 PSIG	..00750.. = 0...750 PSIG	..15000.. = 0...15000 PSIG
	..30/30.. = -30" Hg...30 PSIG	..00025 <sup>2)</sup> .. = 0...25 PSIG	..01000.. = 0...1000 PSIG	..0015A.. = 0...15 PSIA
	..30/45.. = -30" Hg...45 PSIG	..00030.. = 0...30 PSIG	..01500.. = 0...1500 PSIG	..0030A.. = 0...30 PSIA
	..30/60 <sup>1)</sup> .. = -30" Hg...60 PSIG	..00060.. = 0...60 PSIG	..02000.. = 0...2000 PSIG	..0060A.. = 0...60 PSIA
	..30/100.. = -30" Hg...100 PSIG	..00100.. = 0...100 PSIG	..03000.. = 0...3000 PSIG	..0100A.. = 0...100 PSIA
	..30/150.. = -30" Hg...150 PSIG	..00150.. = 0...150 PSIG	..04000.. = 0...4000 PSIG	..0150A.. = 0...150 PSIA
	..30/200.. = -30" Hg...200 PSIG	..00200.. = 0...200 PSIG	..05000.. = 0...5000 PSIG	..0200A.. = 0...200 PSIA
	..30/300.. = -30" Hg...300 PSIG	..00300.. = 0...300 PSIG	..06000.. = 0...6000 PSIG	..0300A.. = 0...300 PSIA
	..00005.. = 0...5 PSIG	..00500.. = 0...500 PSIG	..07500.. = 0...7500 PSIG	

<sup>1)</sup> Only with Voltage Output

<sup>2)</sup> Only with Current Output

**Order Details** (Continued) (Example: **KPK-005001127D**)

Accuracy	Output Signal	Fitting	Electrical Connection	Options
..1.. = 0.5% of Full Scale (Standard)	..1.. = 4-20 mA, 2-Wire (Standard)	..2.. = 1/4" NPT (Standard)	..1 = Mini Hirschmann Connector with 36" Polyurethane-Clad Cable ..2 = 4-pin Bendix (Ni-plated Aluminum) ..3 = 6-pin Bendix (Ni-plated Aluminum)	..D = Surge Damping Orifice
..2.. = 0.25% of Full Scale	..2.. = 0-5 VDC, 3-Wire	..3.. = SAE J1926-3:7/16-20 Adjustable	..6 = 1/2" NPT Male Conduit with 36" Polyurethane-Clad Cable	
	..5.. = 0-10 VDC, 3-Wire		..7 = Mini Hirschmann Connector (Standard) ..25 = M12 x 1 (4-pin Micro-DC)	
<b>Accessories:</b> P/N 807.037 = 4-Pin Micro-DC Connector with 6-foot Cable for Electrical Connection 25 P/N 807.037/5M = 4-Pin Micro-DC Connector with 16-foot Cable for Electrical Connection 25 P/N 807.037/10M = 4-Pin Micro-DC Connector with 32-foot Cable for Electrical Connection 25				

**Diaphragm Seals\***

Model	Description
KP-120215	1-1/2" Tri-Clamp® 316 SS Diaphragm Seal with Glycerine Fill
KP-120220	2" Tri-Clamp® 316 SS Diaphragm Seal with Glycerine Fill
KP-2002 SSG	3/4" NPT 316 SS Flush Diaphragm Seal with Glycerine Fill

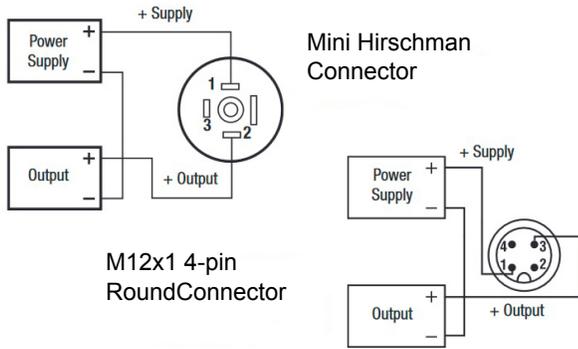
\* Only for Ranges ≥ 0...60 PSIG and Fitting Option 2



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**Wiring Diagrams and Electrical Connections**

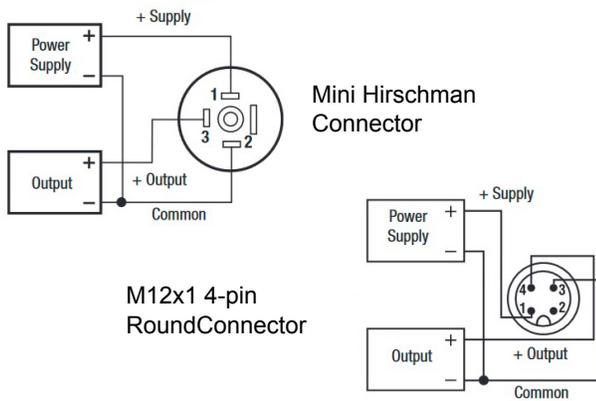
**4-20 mA Output, 2 Wire**



4-20 mA Output, 2 Wire				
Wire	Bendix, 4-Pin or 6-Pin	Mini Hirschmann	Cable	M12x1
+ Supply	pin A	pin 1	Red	pin 1
+ Output	pin B	pin 2	Black	pin 3

Load Limitations 4-20 mA Output Only	
$V_{min} = 10V + (0.022 \times R_L)$	$R_L = R_s + R_w$
	$R_L = \text{Loop Resistance (ohms)}$
	$R_s = \text{Sensor Resistance (ohms)}$
	$R_w = \text{Wire Resistance (ohms)}$

**Voltage Output, 3 Wire**



Voltage Output, 3 Wire				
Wire	Bendix, 4-Pin or 6-Pin	Mini Hirschmann	Cable	M12x1
+ Supply	pin A	pin 1	Red	pin 1
Common	pin B	pin 2	Black	pin 3
+ Output	pin C	pin 3	White	pin 4

**Dimensions**



\*Mate Supplied Separately or Customer Supplied