



The KD Series are for use in high temperature applications where the process temperatures may reach 538°C (1000°F) such as high temperature engineered polymers. The K Series utilizes standard melt pressure principles and construction, but uses a near incompressible NAK (Sodium Potassium) for pressure transmission. The K Series strain sensing technology is bonded foil strain gage.

### MAIN FEATURES

#### Electrical

- Digital output signal with DP404 CAN OPEN communication protocol
- Transmission frequency (Baud rate): 10 Kbaud to 1 Mbaud (default 500 Kbaud)
- Software / Hardware selection of Baud rate and ID nodes
- Operation with 1 or 2 settable alarm limits
- "Autozero" for temperature compensation
- Zero and span drift compensation
- 80% FSO calibration signal

#### Mechanical

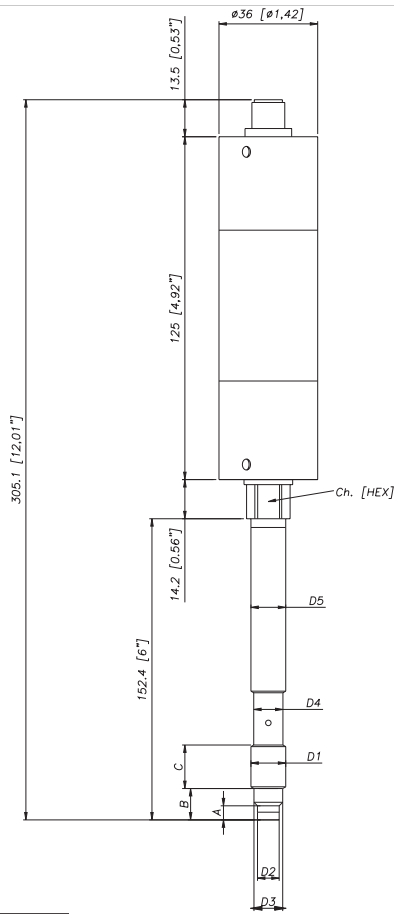
- Pressure ranges: 0-35 to 0-700 bar / 0-500 to 0-10000 psi
- Accuracy:  $< \pm 0.25\%$  FSO (H);  $< \pm 0.5\%$  FSO (M)
- Hydraulic transmission system to guarantee temperature stability (NaK). Liquid conforming to RoHS Directive. NaK is defined as a safe substance (GRAS).
- Quantity of NaK contained per model: KD0 series (30mm<sup>3</sup>) [0.00183 in<sup>3</sup>], KD1, KD2, KD3 series (40mm<sup>3</sup>) [0.00244 in<sup>3</sup>]
- Standard threading: 1/2-20 UNF, M18x1.5; other versions on request.
- Inconel 718 diaphragm with GTP coating for temperatures up to 538°C (1000°F)
- 15-5 PH diaphragm with GTP coating for temperatures up to 400°C (750°F)
- Hastelloy C276 diaphragm for temperatures up to 300°C (570°F).
- 17-7 PH corrugated diaphragm with GTP coating for ranges below 100 bar-1500 psi

### TECHNICAL SPECIFICATIONS

Rated precision, including effects of linearity, repeatability and hysteresis	H $< \pm 0.25\%$ FSO (100...1000 bar) M $< \pm 0.5\%$ FSO (35...1000 bar)
Sampling	16 bit (1)
Pressure ranges	0-500 to 0-15000 psi 0-35 to 0-1000 bar
Maximum applicable pressure	2 x FSO
Measurement principle	Strain gauge
Power supply	12...40Vdc
Typical input	40mA (2)
Insulation resistance (at 50Vdc)	$> 1000$ MOhm
Signal at rated pressure (FSO)	Depends on FSO
Signal at ambient pressure	0
Calibration of ambient pressure	Insertion of an offset
Signal protocol	DP404 CAN OPEN, with baud rate selectable from 10K to 1M baud (default 500 Kbaud)
Response time (10 at 90% FSO)	20ms
Calibration signal	80%FSO
Protection against overvoltage and reverse polarity of power supply	YES
Compensated temperature range of strain gauge housing	0...+76°C (32...170°F)
Maximum temperature range of strain Gauge Housing	-30...+85°C (-22...185°F)
Thermal drift in Zero compensated range; Calibration Sensitivity	$< 0.02\%$ FSO/°C $< 0.01\%$ FSO/°F $< 0.01\%$ FSO/°F
Max. diaphragm temperature	538°C (1000°F)
Influence due to variation of fluid temperature (zero)	$< 3,5$ bar/100°C ( $< 212$ psi/100°F)
Standard contact diaphragm with process	17-7 PH corrugated diaphragm with GTP coating for ranges below 100 bar-1500 psi
Thermocouple (model KD2)	STD: Type * J (isolated junction)
Protection degree	IP65
Electrical connections	M12 DIN EN 50044 5-pin connector
(1) Resolution::	0.01 bar from 35...500bar, 0.1 bar from 700...1000bar, 0.1 psi from 5000...3500psi, 1 psi from 7500...15000psi,
(2) Conditions; FSO =	Power supply 24 Vdc Full Scale Output (Signal at rated pressure)

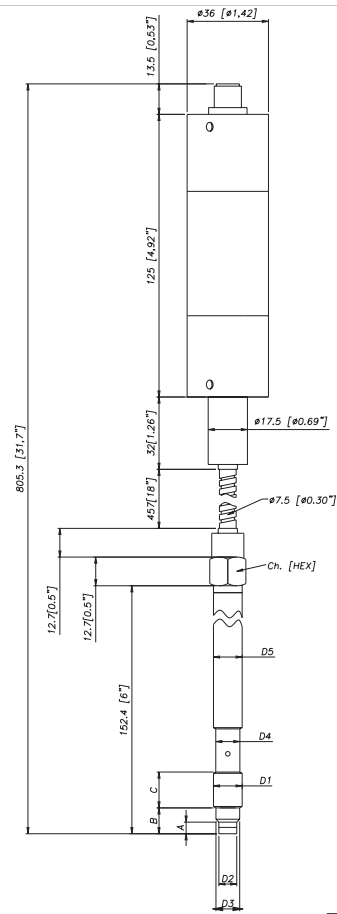
GTP (advanced protection) Coating with high resistance against corrosion, abrasion and high temperature.

# MECHANICAL DIMENSIONS



**KD0**

D1	<b>1/2 - 20UNF</b>
D2	ø7.8 -0.05 [ø0.31" -0.002]
D3	ø10.5 -0.025 [ø0.41" -0.001]
D4	ø10.67 [ø0.42"]
D5	ø12.7 [ø0.5"]
A	5.56 -0.26 [0.22" -0.01]
B	11.2 [0.44"]
C	15.74 [0.62"]
Ch	16 [5/8"]

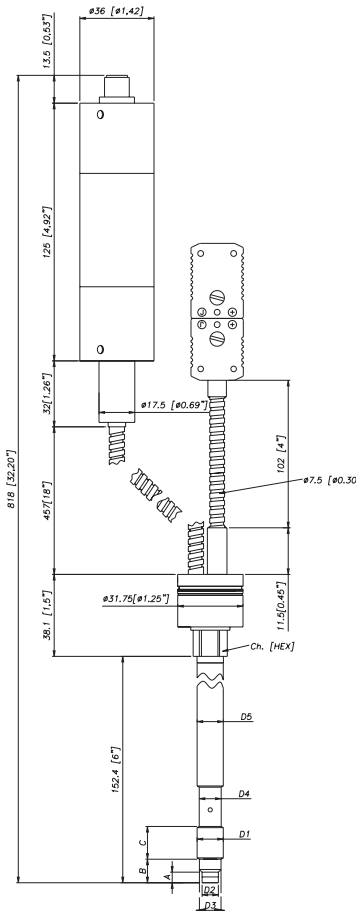


**KD1**

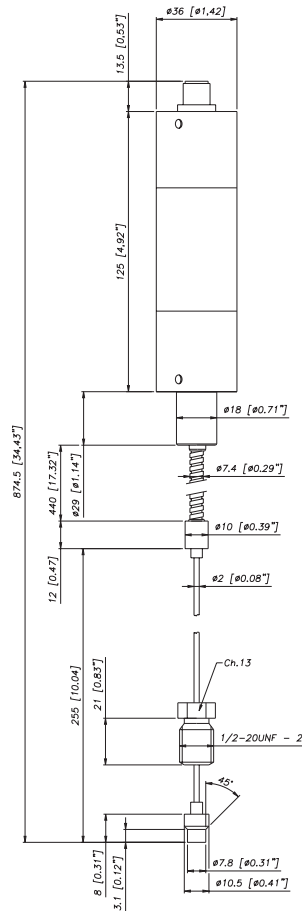
D1	<b>M18x1,5</b>
D2	ø10 -0.05 [ø0.394" -0.002]
D3	ø16 -0.08 [ø0.63" -0.003]
D4	ø16 -0.4 [ø0.63" -0.016]
D5	ø18 [ø0.71"]
A	6 -0.26 [0.24" -0.01]
B	14.8 -0.4 [0.58" -0.016]
C	19 [0.75"]
Ch	19 [3/4"]

**NOTE:**  
Dimensions refer to rigid stem option "4"  
(153 mm – 6")

**ATTENTION:**  
use a maximum  
tightening torque of  
56 Nm (500 in-lb)  
for installation



**KD2**

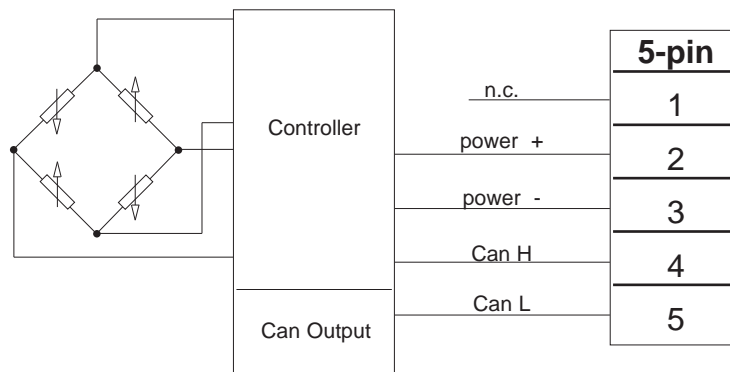


**KD3**

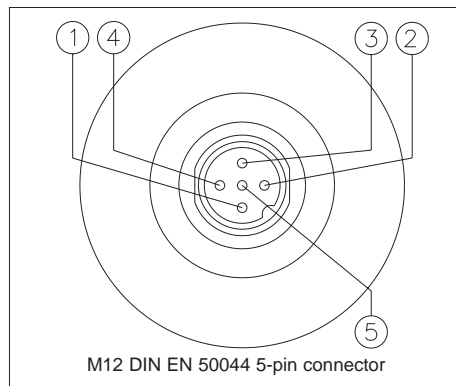
Capillare esposto Exposed capillary	
D1	1/2-20UNF
D2	.307/.305" [7.80/7.75mm]
D3	.414/.412" [10.52/10.46mm]
A	.125/.120" [3.18/3.05mm]
B	.318/.312" [8.08/7.92mm]
C	.81" [20.6mm]

## ELECTRICAL CONNECTIONS

### CAN BUS DP404 DIGITAL OUTPUT



Shielding is connected to transducer body. It is advisable to ground it on the instrument side as well



## ACCESSORIES

### Connectors

5 pin female connector (IP65 protection)

**CON031**

### Extension cables

5-pin connector with 1 meter (3.3 ft) cable  
 5-pin connector with 2 meters (7ft) cable  
 5-pin connector with 5 meters (17 ft) cable

**PCAV310**  
**PCAV311**  
**PCAV314**

Other lengths

**on request**

### Cable color code

Conn.	Wire
1	n.c.
2	Red
3	Black
4	White
5	Blue

### Accessories

Mounting bracket  
 Dummy plug for 1/2-20UNF  
 Dummy plug for M18x1.5  
 Drill kit for 1/2-20UNF  
 Drill kit for M18x1.5  
 Cleaning kit for 1/2-20UNF  
 Cleaning kit for M18x1.5

**SF18**  
**SC12**  
**SC18**  
**KF12**  
**KF18**  
**CT12**  
**CT18**

# ORDER CODE

**K** - - - - - **000**

OUTPUT SIGNAL	
CAN BUS	<b>D</b>

VERSION	
Rigid stem	<b>0</b>
Rigid + flexible stem	<b>1</b>
With thermocouple	<b>2</b>
Exposed capillary	<b>3</b>

CONNECTOR	
Standard	
5-pin M12	<b>5</b>

ACCURACY CLASS	
$\pm 0.25\%$ (ranges $\geq 100$ bar/1500 psi)	<b>H</b>
$\pm 0.5\%$	<b>M</b>

RANGE			
bar		psi	
<b>35</b>	<b>B35U</b>	<b>500</b>	<b>P05C</b>
<b>50</b>	<b>B05D</b>	<b>750</b>	<b>P75D</b>
<b>70</b>	<b>B07D</b>	<b>1000</b>	<b>P01M</b>
<b>100</b>	<b>B01C</b>	<b>1500</b>	<b>P15C</b>
<b>200</b>	<b>B02C</b>	<b>3000</b>	<b>P03M</b>
<b>350</b>	<b>B35D</b>	<b>5000</b>	<b>P05M</b>
<b>500</b>	<b>B05C</b>	<b>7500</b>	<b>P75C</b>
<b>700</b>	<b>B07C</b>	<b>10000</b>	<b>P10M</b>
<b>1000</b>	<b>B01M</b>	<b>15000</b>	<b>P15M</b>

000= Standard version  
Special or customized versions available on request

CONTACT DIAPHRAGM	
<b>I</b>	INCONEL 718 (538°C*)
<b>S</b>	15-5 PH (400°C*)
<b>H</b>	HASTELLOY C276 (300°C*)

\* max temperature

FLEXIBLE STEM LENGTH (mm / inches)	
Standard (KD0)	
<b>0</b>	none
Standard (KD1, KD2)	
<b>D</b>	457mm 18"
<b>E</b>	610mm 24"
<b>F</b>	760mm 30"
Standard (KD3)	
<b>L</b>	711mm 28"
Available on request	
<b>A</b>	76mm 3"
<b>B</b>	152mm 6"
<b>C</b>	300mm 12"

RIGID STEM LENGTH * (mm / inches)	
Standard (KD0, KD1, KD2)	
<b>4</b>	153mm 6"
<b>5</b>	318mm 12.5"
Standard (KD3)	
<b>0</b>	none
Available on request	
<b>1</b>	38mm 1.5"
<b>2</b>	50mm 2"
<b>3</b>	76mm 3"
<b>6</b>	350mm 14"
<b>7</b>	400mm 16"
<b>8</b>	456mm 18"

THREAD	
Standard	
<b>1</b>	1/2 - 20 UNF
<b>4</b>	M18 x 1.5

(\*) max combined rigid/flexible stem length is 1000mm - 39"

### Example:

#### **KD0-5-M-B07C-1-4-0-I-000**

Melt pressure transducer with Can output, 5-pin connector, 1/2 - 20 UNF threading, pressure range 700 bar, 0.5% accuracy class, 153 mm (6") rigid stem, Inconel 718 diaphragm.

#### **KD1-5-M-P03M-1-4-D-I-000**

Melt pressure transducer with Can output, 5-pin connector, 1/2 - 20 UNF threading, pressure range 3000 psi, 0.5% accuracy class, 153 mm (6") rigid stem, 457 mm (18") flexible stem, Inconel 718 diaphragm.

GEFRAN reserves the right to make any kind of design or functional modification at any moment without prior notice

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# GEFRAN

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