



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 1Mbaud (default 500 Kbaud)
- Software selection of Baud rate and ID nodes
- Operation with 1 or 2 settable alarm limits
- “Autozero” for temperature 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 (30mm3) [0.00183 in3], KD1, KD2, KD3 series (40mm3) [0.00244 in3]
- 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
- Stem material: 17-4 PH

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

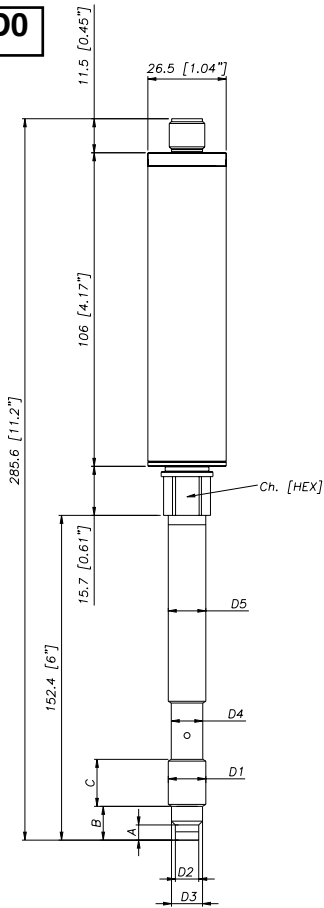
### TECHNICAL SPECIFICATIONS

Rated precision, including effects of linearity, repeatability and hysteresis	<b>H</b> $< \pm 0.25\%$ FSO (100...1000 bar) <b>M</b> $< \pm 0.5\%$ 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	20 mA (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)	20 ms
Electronic response time (10 at 90% FSO)	2 ms
Calibration signal	80% FSO
Protection against overvoltage and reverse polarity of power supply	YES
Compensated temperature range of strain gauge housing	0...+85°C (32...+185°F)
Maximum temperature range of strain Gauge Housing	-30...+105°C (-22...+221°F)
Thermal drift in compensated Zero range;	<0.02 %FSO/°C
Calibration	<0.01 %FSO/°F
Sensitivity	<0.01 %FSO/°F
Max. diaphragm temperature	538°C (1000°F)
Influence due to variation of fluid temperature (zero)	< 3,5bar/100°C (< 28 psi/100°F)
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...350psi, 1 psi from 7500...15000psi,  
(2) Conditions: Power supply 24 Vdc  
FSO = Full Scale Output (Signal at rated pressure)

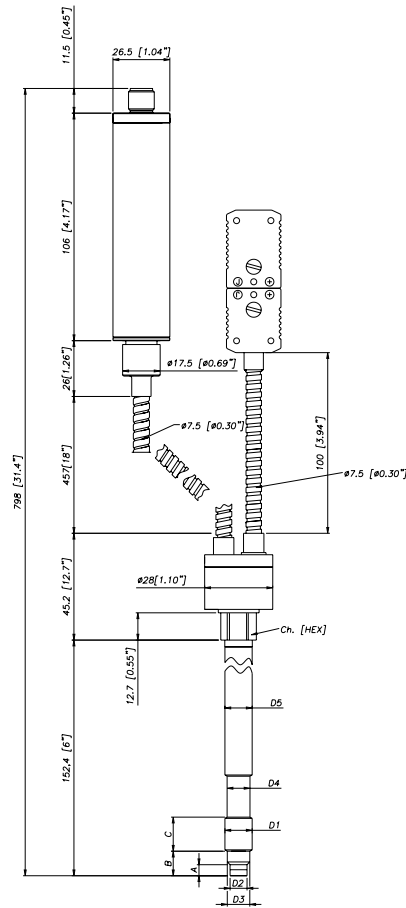
# MECHANICAL DIMENSIONS

**KD0**

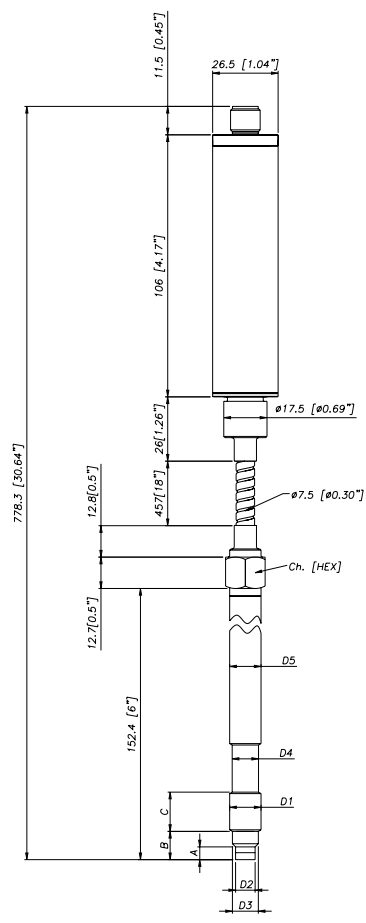


D1	<b>1/2 - 20UNF</b>
D2	ø7.8 -0.05 [ø0.31" -0.002]
D3	ø10.5 -0.025 [ø0.41" -0.001]
D4	ø10.67 [ø0.42"]
D5	ø12.7 [ø0.5"]
A	5.56 -0.26 [0.22" -0.01]
B	11.2 [0.44"]
C	15.74 [0.62"]
Ch [Hex]	16 [5/8"]

**KD2**

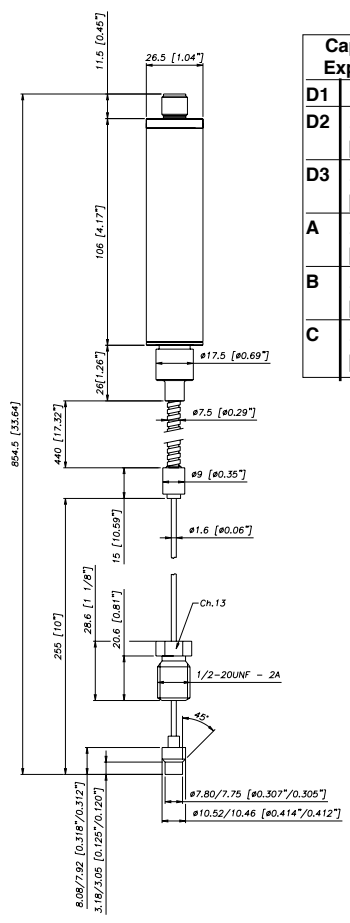


**KD1**



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 [Hex]	19 [3/4"]

**KD3**



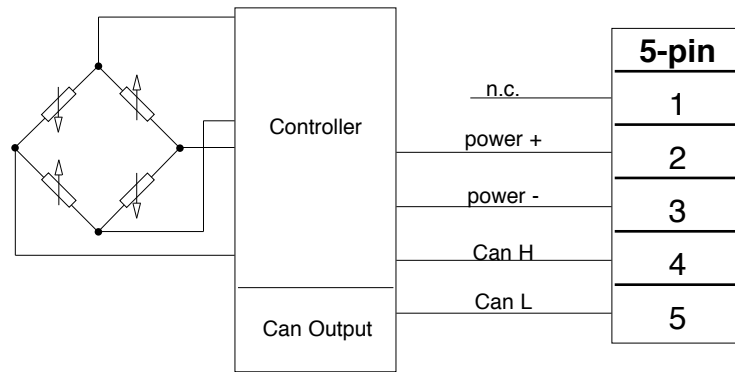
Capillare esposto Exposed capillary	
D1	1/2-20UNF
D2	.307/.305" [7.80/7.75mm]
D3	.414/.412" [10.52/10.46mm]
A	.125/.120" [3.18/3.05mm]
B	.318/.312" [8.08/7.92mm]
C	.81" [20.6mm]

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

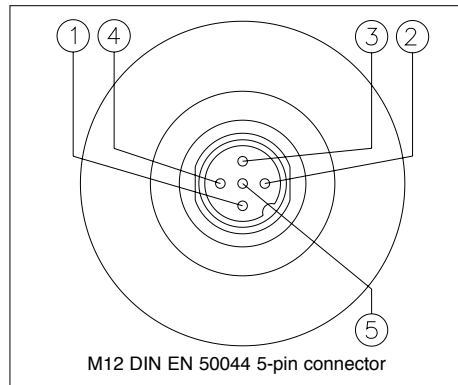
**WARNING :** For installation use a maximum tightening torque of 56 Nm(500 in-lb)

## 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

**PCAV161**

5-pin connector with 2 meters (7ft) cable

**PCAV162**

5-pin connector with 5 meters (17 ft) cable

**PCAV163**

Other lengths

**on request**

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

### Accessories

Mounting bracket

**SF18**

Dummy plug for 1/2-20UNF

**SC12**

Dummy plug for M18x1.5

**SC18**

Drill kit for 1/2-20UNF

**KF12**

Drill kit for M18x1.5

**KF18**

Cleaning kit for 1/2-20UNF

**CT12**

Cleaning kit for M18x1.5

**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	
<b>Standard</b>	
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"

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

THREAD	
Standard	
<b>1</b>	1/2 - 20 UNF
<b>4</b>	M18 x 1.5 (not available with Inconel contact diaphragm)

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.

Sensors are manufactured in compliance with:

- EMC 2004/108/CE compatibility directive
- RoHS 2002/95/CE directive

Electrical installation requirements and Conformity certificate are available on our web site: [www.gefran.com](http://www.gefran.com)

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

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