



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

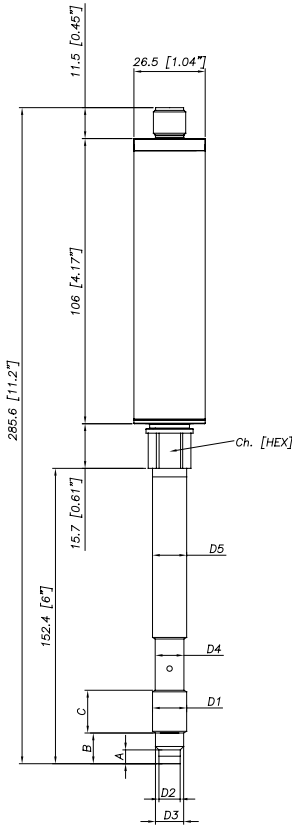
GTP (advanced protection) Coating with high resistance against corrosion, abrasion and high temperature.

TECHNICAL SPECIFICATIONS

| | |
|---|--|
| Rated precision, including effects of linearity, repeatability and hysteresis | 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 | 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 range; | Zero 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) | $< 3,5\text{bar}/100^\circ\text{C}$ ($< 28\text{psi}/100^\circ\text{F}$) |
| 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) |

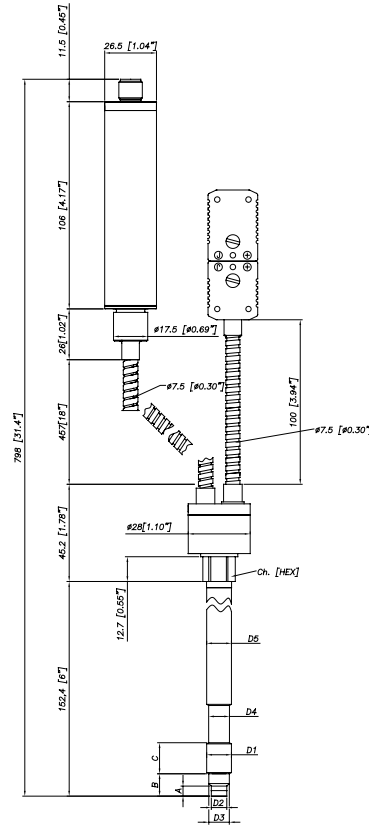
MECHANICAL DIMENSIONS

KD0

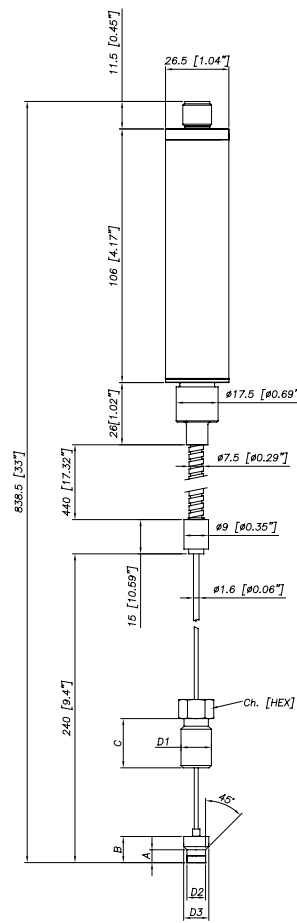


| | |
|----------|--|
| D1 | 1/2 - 20UNF |
| D2 | $\phi 7.8 -0.05$ [$\phi 0.31$ " -0.002] |
| D3 | $\phi 10.5 -0.025$ [$\phi 0.41$ " -0.001] |
| D4 | $\phi 10.67$ [$\phi 0.42$ "] |
| D5 | $\phi 12.7$ [$\phi 0.5$ "] |
| A | $5.56 -0.26$ [0.22 " -0.01] |
| B | 11.2 [0.44 "] |
| C | 15.74 [0.62 "] |
| Ch [Hex] | 16 [$5/8$ "] |

KD2



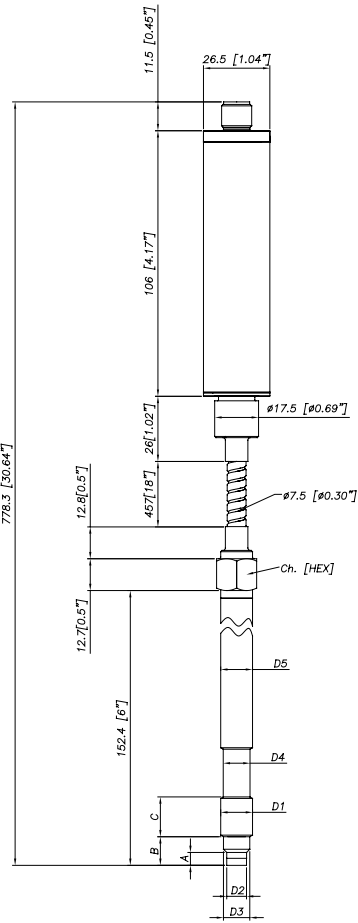
KD3



| 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] |

| | |
|----------|--|
| D1 | M18x1,5 |
| D2 | $\phi 10 -0.05$ [$\phi 0.394$ " -0.002] |
| D3 | $\phi 16 -0.08$ [$\phi 0.63$ " -0.003] |
| D4 | $\phi 16 -0.4$ [$\phi 0.63$ " -0.016] |
| D5 | $\phi 18$ [$\phi 0.71$ "] |
| A | $6 -0.26$ [0.24 " -0.01] |
| B | $14.8 -0.4$ [0.58 " -0.016] |
| C | 19 [0.75 "] |
| Ch [Hex] | 19 [$3/4$ "] |

KD1

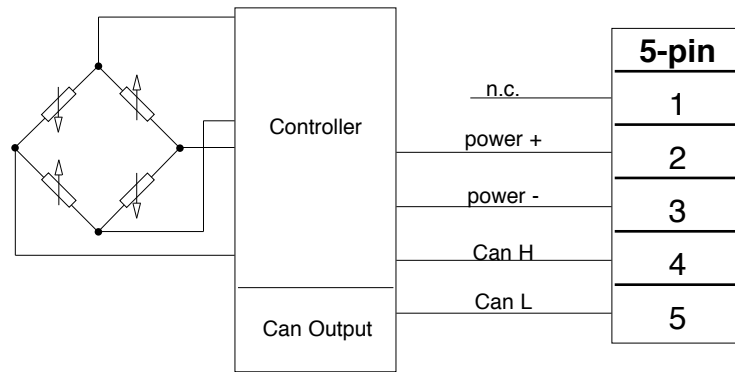


NOTE : dimensions refer to rigid stem length option "4" (153 mm – 6")

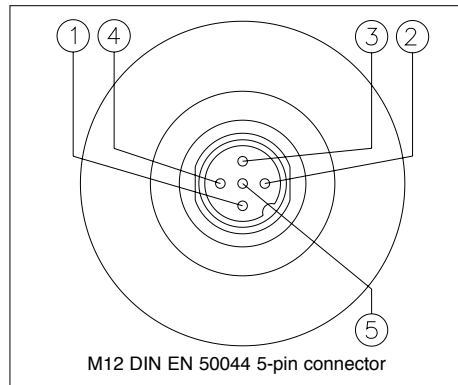
WARNING : For installation use a maximum tightening torque of 56 Nm (500 in-lb)

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 | D |

| VERSION | |
|-----------------------|----------|
| Rigid stem | 0 |
| Rigid + flexible stem | 1 |
| With thermocouple | 2 |
| Exposed capillary | 3 |

| CONNECTOR | |
|-----------|----------|
| Standard | |
| 5 pin M12 | 5 |

| ACCURACY CLASS | |
|---------------------------------------|----------|
| ± 0.25% (ranges ≥100 bar/1500 psi) | H |
| ± 0.5% | M |

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

000= Standard version
Special or customized versions available on request

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

* max temperature

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

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

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

| THREAD | |
|----------|--|
| Standard | |
| 1 | 1/2 - 20 UNF |
| 4 | 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

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

GEFRAN spa
via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) - ITALIA
tel. 0309888.1 - fax. 0309839063
Internet: <http://www.gefran.com>

