



The WD series of Gefran, are pressure transmitters for using in High temperature environment.

The main characteristic of this series is the capability to read temperature of the media up to 315°C.

The constructive principle is based on the hydraulic transmission of the pressure.

The fluid-filled system assures the temperature stability. The physical measure is transformed in a electrical measure by means the strain-gauge technology.

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
- Zero and span drift compensation
- 80% FSO calibration signal
- Filling with certified oil FDA, CFR178.3620 and CFR172.878

Mechanical

- Pressure ranges: 0-35 to 0-1000 bar/0-500 to 0-15000 psi
- Precision: $< \pm 0.25\%$ FSO (H); $< \pm 0.5\%$ FSO (M)
- Extensimetric measurement principle with Wheatstone jumper
- Hydraulic transmission system to guarantee temperature stability (diathermic oil). Filling with certified oil FDA, CFR178.3620 and CFR172.878
- Quantity of oil contained for model: series WDE0 (30mm³); series WD1,WD2,WD3 (40mm³)
- Standard threading: 1/2-20 UNF, M18x1.5; other versions on request
- Autozero function by software
- Stainless steel 17-7 PH diaphragm with GTP coating

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 (350...1000 bar) M $< \pm 0.5\%$ FSO (35...1000 bar) |
| Sampling | 16 bit (1) |
| Pressure ranges | 0-500 to 0-15.000 psi 0-35 to 0-1000 bar |
| Maximum applicable pressure | 2 x FSO |
| Measurement principle | Strain gauge |
| Power supply | 12...40 Vdc |
| 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 | <0.02 %FSO/°C |
| Calibration Sensitivity | <0.01 %FSO/°F <0.01 %FSO/°F |
| Max. diaphragm temperature | 315°C (600°F) |
| Influence due to variation of fluid temperature (zero) | 0.04bar/°C 30 Psi/100°F |
| Standard Material in contact with process medium | Diaphragm: • 17-7PH corrugated diaphragm with GTP Stem • 17-4 PH |
| Thermocouple (model WD2) | STD: Type * J (isolated coupling) |
| Protection level | IP65 |
| Electrical connections | M12 DIN EN 50044 5-pin connector |

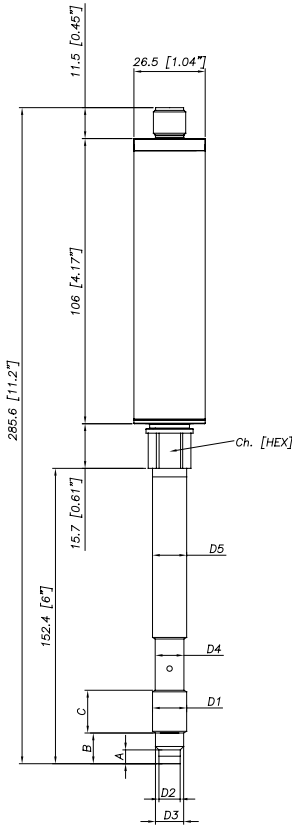
(1) resolution: 0.01 bar from 35...500bar; 0.1 bar from 700...1000bar;
0.1 psi from 5000...350psi; 1 psi from 7500...15000psi

(2) Conditions: Power supply 24 Vdc

FSO = Full Scale Output (Signal at rated pressure)

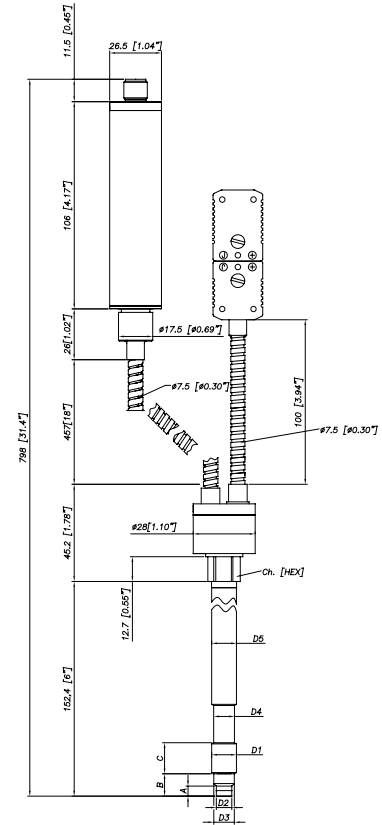
MECHANICAL DIMENSIONS

WD0

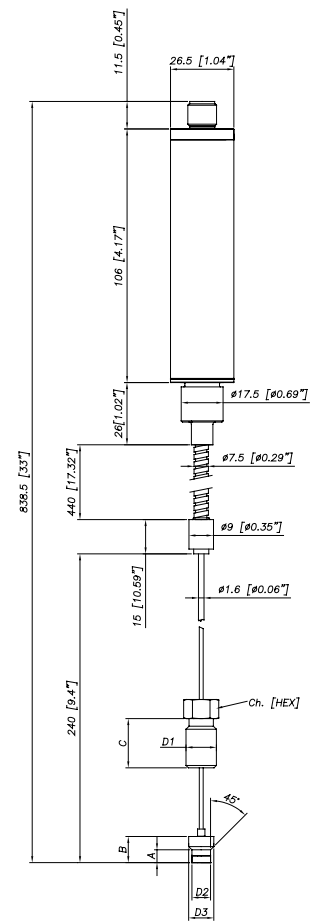


| | |
|----------|--|
| D1 | 1/2 - 20UNF |
| D2 | $\phi 7.8 - 0.05$ [$\phi 0.31$ " - 0.002] |
| D3 | $\phi 10.5 - 0.025$ [$\phi 0.41$ " - 0.001] |
| D4 | $\phi 10.67$ [$\phi 0.42$ "] |
| D5 | $\phi 12.7$ [$\phi 0.5$ "] |
| A | $5.56 - 0.26$ [0.22 " - 0.01] |
| B | 11.2 [0.44 "] |
| C | 15.74 [0.62 "]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

WD2

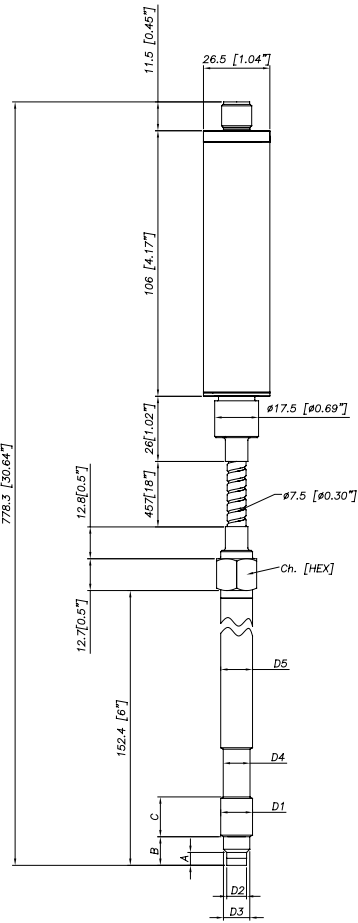


WD3



| 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] |

WD1



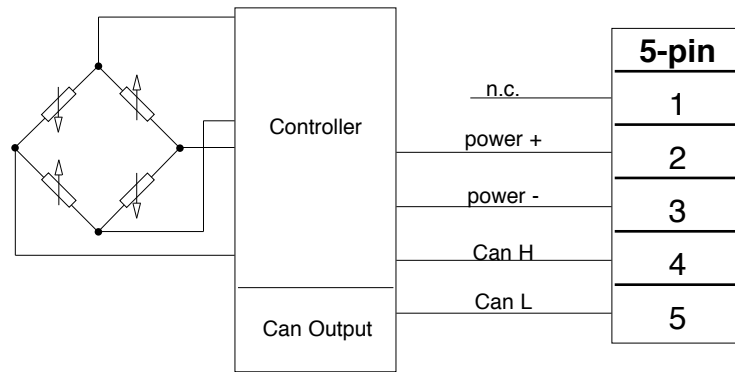
| | |
|----------|--|
| D1 | M18x1,5 |
| D2 | $\phi 10 - 0.05$ [$\phi 0.394$ " - 0.002] |
| D3 | $\phi 16 - 0.08$ [$\phi 0.63$ " - 0.003] |
| D4 | $\phi 16 - 0.4$ [$\phi 0.63$ " - 0.016] |
| D5 | $\phi 18$ [$\phi 0.71$ "] |
| A | $6 - 0.26$ [0.24 " - 0.01] |
| B | $14.8 - 0.4$ [0.58 " - 0.016] |
| C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

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

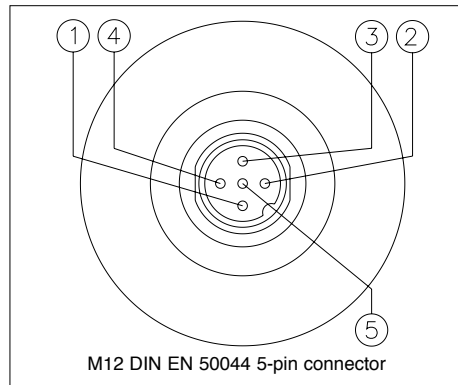
WARNING : For installation use a maximum tightening torque of 56 Nm(500 in-lb)

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 cords

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

PCAV161
PCAV162
PCAV163

Other lengths

on request

Accessories

Fastening bracket
 Protective plug for 1/2 - 20 UNF
 Protective plug for M18x1.5
 Punch kit for 1/2-20 UNF
 Punch kit for M18x1.5
 Cleaning kit for 1/2-20 UNF
 Cleaning kit for M18x1.5

SF18
SC12
SC18
KF12
KF18
CT12
CT18

Cord color code

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

ORDER CODE

W - - - - - 000

| OUTPUT SIGNAL | |
|---------------|---|
| CAN BUS | D |

| CONFIGURATION | |
|----------------------|---|
| Rigid rod | 0 |
| Rigid + flexible rod | 1 |
| With thermocouple | 2 |
| Exposed capillary | 3 |

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

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

| MEASUREMENT 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= Special executions of the standard version or custom versions may be ordered on request

| LENGTH OF FLEXIBLE ROD (mm / inches) | | |
|---|-------|-----|
| Standard (WD0) | | |
| 0 | none | |
| Standard (WD1, WD2) | | |
| D | 457mm | 18" |
| E | 610mm | 24" |
| F | 760mm | 30" |
| Standard (WD3) | | |
| L | 711mm | 28" |
| On request | | |
| A | 76mm | 3" |
| B | 152mm | 6" |
| C | 300mm | 12" |

| LENGTH OF RIGID ROD * (mm / inches) | | |
|--|-------|-------|
| Standard (WD0, WD1, WD2) | | |
| 4 | 153mm | 6" |
| 5 | 318mm | 12.5" |
| Standard (WD3) | | |
| 0 | none | |
| On request | | |
| 1 | 38mm | 1.5" |
| 2 | 50mm | 2" |
| 3 | 76mm | 3" |
| 6 | 350mm | 14" |
| 7 | 400mm | 16" |
| 8 | 456mm | 18" |

| THREADING | |
|-----------|--------------|
| Standard | |
| 1 | 1/2 - 20 UNF |
| 4 | M18 x 1.5 |

(*) note: max. total length of rigid/flexible rod is 914 mm-36

Example

WD0-5-M-B07C-1-4-0-000

Oil-filled melt pressure transducer with Can output, 5-pin connector, 1/2 - 20 UNF threading, pressure range 700 bar, precision class 0.5%, 153 mm (6") rigid rod.

WD1-5-M-P03M-1-4-D-000

Oil-filled melt pressure transducer with Can output, 5-pin connector, 1/2 - 20 UNF threading, pressure range 3000 bar, precision class 0.5%, 153 mm (6") rigid rod, 457 mm (18") flexible rod.

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 aesthetic or functional changes at any time and without notice.

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