



The M3 series of GEFRA, are pressure transducers for using in High temperature environment. The main characteristic of this series is the capability to read temperature of the media up to 400°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 an electrical measure by means of the strain-gauge technology.

MAIN FEATURES

- Pressure ranges from:
0-35 to 0-2000 bar / 0-500 to 0-30000 psi
- Accuracy: $<\pm 0.25\%$ FSO (H); $<\pm 0.5\%$ FSO (M)
- Fluid-filled system for temperature stability
- Mercury filling volume:
M30 (30mm³), M31-M32-M33 (40mm³)
- 1/2-20UNF, M18x1.5 standard threads; other types available on request
- Standard diaphragm is 15-5 PH stainless steel with GTP coating
- 17-7 PH corrugated diaphragm with GTP coating for ranges below 100bar-1500psi

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

TECHNICAL SPECIFICATIONS

| | |
|--|---|
| Accuracy (1) | H $<\pm 0.25\%$ FSO (100...2000 bar) M $<\pm 0.5\%$ FSO (35...2000 bar) |
| Resolution | Infinite |
| Measurement range | 0..35 to 0..2000bar 0..500 to 0..30000psi |
| Maximum overpressure | 2 x FS 1.5 x FS above 1000bar/15000psi |
| Measurement principle | Strain gage Wheatstone bridge |
| Supply voltage | 6..12Vdc (10Vdc typical) |
| Strain gage bridge resistance | 350 Ohm (550 Ohm below 100bar - 1500psi) |
| Isolation resistance (at 50Vdc) | >1000 MOhm |
| Full Scale Output (FSO) (tol. ± 0.5 FSO) | 2.5 mV/V (option 2) 3.33 mV/V (option 3) |
| Zero balance | $\pm 0.5\%$ FSO |
| Calibration signal | 80% FSO |
| Compensated temperature range | 0...+100°C 32...212°F |
| Maximum temperature range | -30...+120°C -22...250°F |
| Thermal drift in compensated range Zero/Calibr./Sens. | $< 0.02\%$ FSO/°C $< 0.01\%$ FSO/°F |
| Diaphragm maximum temperature | 400°C 750°F |
| Zero drift due to change in process temperature | 0.02 bar/°C 15 psi/100°F |
| Standard material in contact with process medium | Diaphragm: • 15-5 PH with GTP coating • 17-7 PH corrugated diaphragm with GTP coating for ranges <100 bar (1500psi) Stem: • 17-4 PH |
| Thermocouple (model M32) | STD : type "J" (isolated junction) |
| Protection degree (with 6-pin mating connector) | IP65 |
| Electrical connections | 6-pin Conn. VPT07RA10-6PT (PT02A-10-6P) 8-pin Conn. PC02E-12-8P |

FSO = Full Scale Output

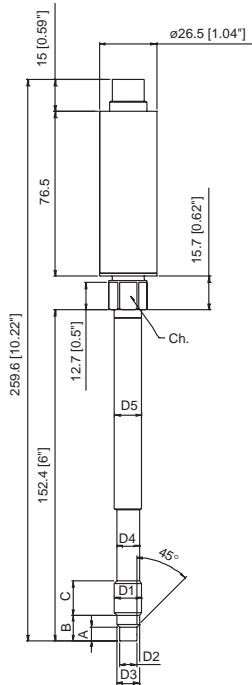
(1) BFSL method (Best Fit Straight Line): includes combined effects of Non-Linearity, Hysteresis and Repeatability



According to the European Directive 97/23/CE (PED), for range above 500 bar the series M3.../M2... declare the CE mark.

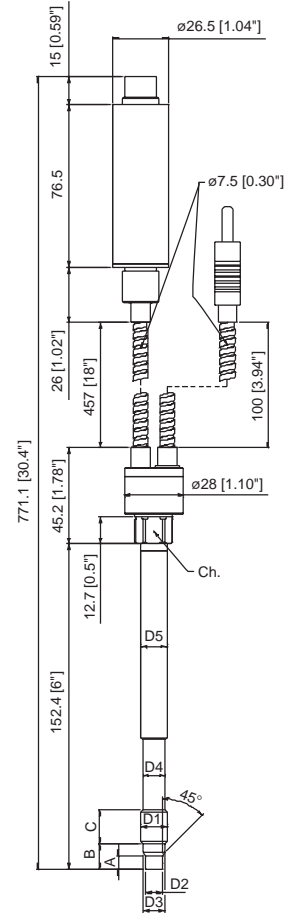
MECHANICAL DIMENSIONS

M30

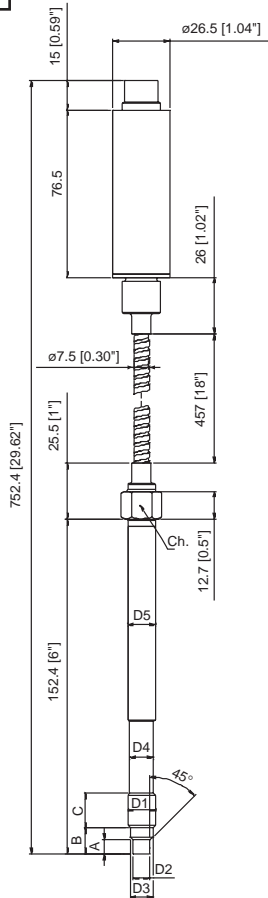


| | |
|----|---------------------------------|
| D1 | 1/2 - 20UNF |
| D2 | ø7.8 -0.05 [ø0.31" -0.002] |
| D3 | ø10.5 -0.025 [ø0.41" -0.001] |
| D4 | ø10.67 [ø0.42"] |
| D5 | ø12.7 [ø0.5"] |
| A | 5.56 -0.26 [0.22" -0.01] |
| B | 11.2 [0.44"] |
| C | 15.74 [0.62"] |
| Ch | 16 [5/8"] |

M32

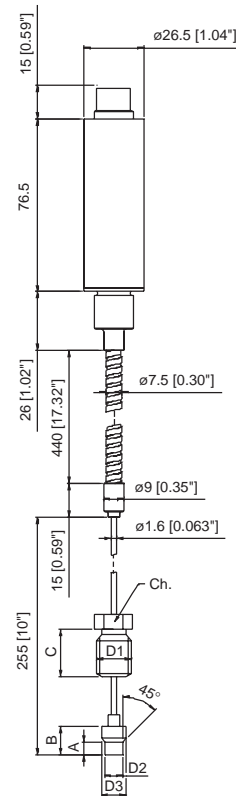


M31



| | |
|----|-------------------------------|
| D1 | M18x1.5 |
| 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"] |

M33



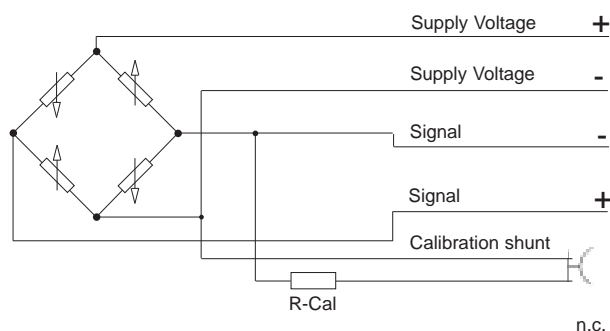
| Exposed capillary | |
|-------------------|-------------------------------|
| D1 | 1/2-20UNF |
| D2 | .307/.305" [7.80/7.75mm] |
| D3 | .414/.412" [10.52/10.46mm] |
| A | .125/.120" [3.18/3.05mm] |
| B | .318/.312" [8.08/7.92mm] |
| C | .81" [20.6mm] |

NOTE : Dimensions refer to rigid stem length option "4" (153mm - 6")

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

ELECTRICAL CONNECTIONS

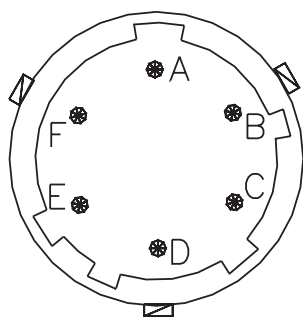
mV/V OUTPUT



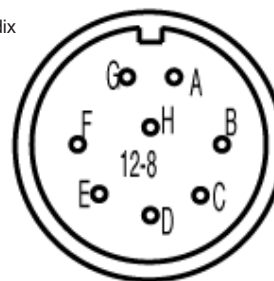
| 6-pin | 8-pin |
|-------|-------|
| C | A |
| D | C |
| B | D |
| A | B |
| E - F | E - F |
| | G - H |

Connect the cable sheathing to the side of the instrument.

6 pin connector
VPT07RA10-6PT2
(PT02A-10-6P)



8 pin connector
PC02E-12-8P Bendix



ACCESSORIES

Connectors

6-pin mating connector (IP65 protection degree)

CON300

8-pin mating connector

CON307

Extension cables

6-pin connector with 8m (25ft) cable

C08W

6-pin connector with 15m (50ft) cable

C15W

6-pin connector with 25m (75ft) cable

C25W

6-pin connector with 30m (100ft) cable

C30W

Other lengths

consult factory

Cable color code

| Conn. | Wire |
|-------|--------|
| A | Red |
| B | Black |
| C | White |
| D | Green |
| E | Blue |
| F | Orange |
| G | n.c. |
| H | n.c. |

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

Thermocouple for M32 model

Type "J" (153mm - 6" stem)

TTER 601

ORDER CODE

M - - - - - - - - - - 000

| OUTPUT SIGNAL | |
|---------------|---|
| 2.5 mV/V | 2 |
| 3.33 mV/V | 3 |

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

| CONNECTOR | |
|-----------|---|
| Standard | |
| 6 pin | 6 |
| 8 pin | 8 |

| ACCURACY CLASS | |
|--|---|
| 0.25% FSO (ranges ≥ 100 bar/1500 psi) | H |
| 0.5% FSO | 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 |
| 1400 | B14C | 20000 | P20M |
| 2000 | B02M | 30000 | P30M |

000 = Standard version
Special or customized versions available on request

| FLEXIBLE LENGTH (mm / inches) | |
|----------------------------------|------------|
| Standard (M30) | |
| 0 | none |
| Standard (M31, M32) | |
| D | 457mm 18" |
| E | 610mm 24" |
| F | 760mm 30" |
| Standard (M33) | |
| L | 711mm 28" |
| Available on request | |
| A | 76mm 3" |
| B | 152mm 6" |
| C | 300mm 12" |
| G | 914mm 36" |
| H | 1067mm 42" |
| I | 1220mm 48" |
| J | 1372mm 54" |
| K | 1520mm 60" |

| RIGID STEM LENGTH (mm / inches) | |
|------------------------------------|-------------|
| Standard (M30, M31, M32) | |
| 4 | 153mm 6" |
| 5 | 318mm 12.5" |
| Standard (M33) | |
| 0 | none |
| Available on request | |
| 1 | 38mm 1.5" |
| 2 | 50mm 2" |
| 3 | 76mm 3" |
| 6 | 350mm 14" |
| 7 | 400mm 16" |
| 8 | 456mm 18" |

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

Examples

M32-6-M-B07C-1-4-D-000

Melt pressure transducer with type "J" thermocouple, 3.33 mV/V output, 6-pin connector, 1/2-20UNF thread, 700bar full scale, 0.5 % accuracy class, 153 mm (6") rigid stem, 457mm (18") flexible capillary.

M20-8-M-P03M-1-4-0-000

Melt pressure transducer, rigid stem, 2.5 mV/V output, 8-pin connector, 1/2-20UNF thread, 3000psi full scale, 0.5 % accuracy class, 153 mm (6") rigid stem



The Melt pressure transmitter/transducer are available with GOST-R certification. The request of this version must be specified on the order.

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



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