

The M3 series of Gefran, 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 a electrical measure by means the strain-gauge technology.

#### MAIN FEATURES

- Pressure ranges from:  
0-35 to 0-2000 bar / 0-500 to 0-30000 psi
- Accuracy:  $\leq \pm 0.25\%$  FSO (H);  $\leq \pm 0.5\%$  FSO (M)
- Fluid-filled system for temperature stability
- Mercury filling volume:  
M30 (30mm<sup>3</sup>), M31-M32-M33 (40mm<sup>3</sup>)
- 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*

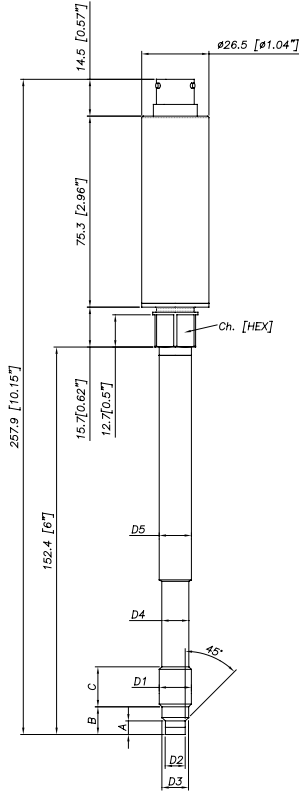
#### TECHNICAL SPECIFICATIONS

Accuracy (1)	<b>H</b> $\leq \pm 0.25\%$ FSO (100...2000 bar) <b>M</b> $\leq \pm 0.5\%$ 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. $\pm 0.5$ 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

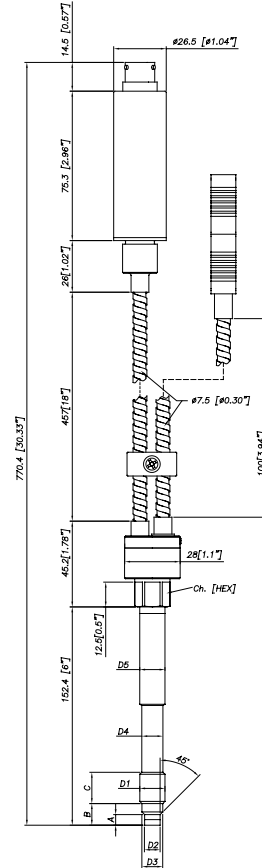
# MECHANICAL DIMENSIONS

## M30



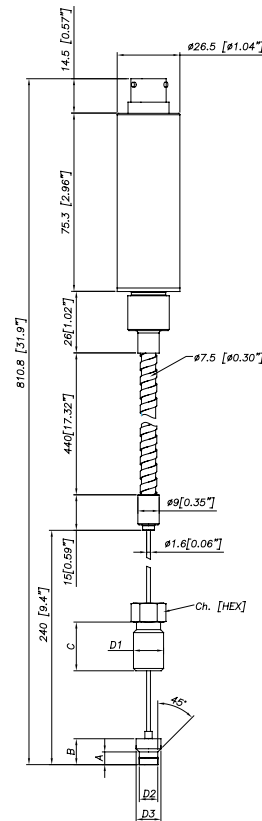
D1	<b>1/2 - 20UNF</b>
D2	ø7.8 -0.05 [ø0.31" -0.002 ]
D3	ø10.5 -0.025 [ø0.41" -0.001 ]
D4	ø10.67 [ø0.42" ]
D5	ø12.7 [ø0.5" ]
A	5.56 -0.26 [0.22" -0.01 ]
B	11.2 [0.44" ]
C	15.74 [0.62" ]
Ch [Hex]	16 [5/8" ]

## M32



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" ]

## M33



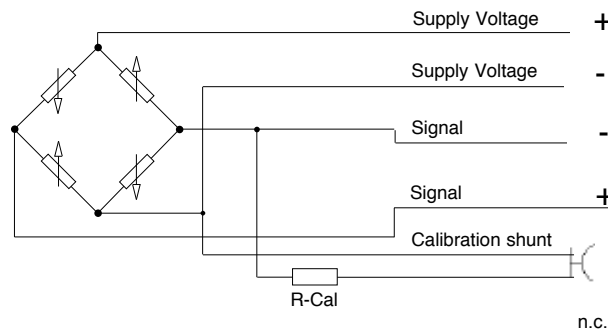
Exposed capillary	
D1	1/2-20UNF
D2	.307/.305" [7.80/7.75mm]
D3	.414/.412" [10.52/10.46mm]
A	.125/.120" [3.18/3.05mm]
B	.318/.312" [8.08/7.92mm]
C	.81" [20.6mm]

**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

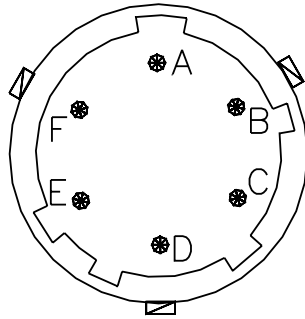
## mV/V OUTPUT



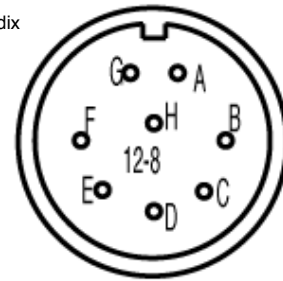
6-pin	8-pin
C	A
D	C
B	D
A	B
E - F	E - F
	G - H

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)  
8-pin mating connector

CON300  
CON307

### Extension cables

6-pin connector with 8m (25ft) cable  
6-pin connector with 15m (50ft) cable  
6-pin connector with 25m (75ft) cable  
6-pin connector with 30m (100ft) cable  
8-pin connector with 8m (25ft) cable  
8-pin connector with 15m (50ft) cable  
8-pin connector with 25m (75ft) cable  
8-pin connector with 30m (100ft) cable

C08W  
C15W  
C25W  
C30W  
E08W  
E15W  
E25W  
E30W

Other lengths

consult factory

### 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

### Thermocouple for M32 model

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

TTER 601

Cable color code 6 wires	
Conn.	Wire
A	Red
B	Black
C	White
D	Green
E	Blue
F	Orange

Cable color code 8 wires	
Conn.	Wire
A	White
B	Red
C	Green
D	Black
E	Blue
F	Orange
G	n.c.
H	n.c.

# 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

Product designed and available in compliance with Directive 2011/65/EU (RoHS II) only for large-scale stationary installation or industrial tools, or for B-to-B laboratory equipments for R&D purposes

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

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