

The "IMPACT" series of Gefran, are pressure transmitters, without transmission fluid, for using in High temperature environment (350°C).

Medium pressure is transferred directly to the sensitive silicon element via a thick diaphragm.

Strain is transduced by a micro-worked silicon structure (MEMS).

The operating principle is piezoresistive.

"IMPACT" is Gefran's exclusive series of high-temperature pressure sensors that use the piezoresistive principle.

The main characteristic of "IMPACT" sensors is that they do not contain any transmission fluid.

The sensitive element, directly positioned behind the contact membrane, is realised in silicon through microprocessing techniques.

The micro structure includes the measurement membrane and piezoresistors.

The minimum deflection required by the sensitive element makes it possible to use very robust mechanics.

The process contact membrane can be up to 15 times thicker than the membrane used in traditional Melt sensors.

#### ADVANTAGES

- Total compatibility with the European RoHS Directive
- High strength
- Long life
- Working temperature: up to 350°C
- Excellent read stability over time
- Fast response time < 1ms

#### MAIN FEATURES

- Pressure ranges: 0-100 to 0-1000 bar / 0-1500 to 0-15000 psi
- Accuracy: < ±0.25% FSO (H); < ±0.5% FSO (M)
- Standard threading 1/2-20UNF, M18x1.5; other versions on request
- Other types of diaphragms are available on request
- Autozero function on board / external option
- 15-5 PH stainless steel diaphragm GTP coated

#### AUTOZERO FUNCTION

All signal variations in the absence of pressure can be eliminated by using the Autozero function.

This function is activated by closing a magnetic contact located on the transmitter housing or by means of external autozero.

The procedure is permitted only with pressure at zero".

The Autozero function should be activated ONLY when the sensor is completely installed on the system.

#### TECHNICAL SPECIFICATIONS

Accuracy (1)	H <±0.25%FSO M <±0.5%FSO
Resolution	16 Bit
Measurement range	0..100 to 0..1000bar 0..1500 to 0..15000psi
Maximum overpressure (without degrading performances)	2 x FS 1.5 x FS above 700bar/10000psi
Measurement principle	Piezoresistivo
Power supply	15...30Vdc N, C
Maximum current absorption	25mA
Insulation resistance (at 50Vdc)	>1000 MOhm
Output signal Full Scale FSO	5Vdc (M) - 10Vdc (N) 5.1Vdc (B) - 10.1Vdc (C)
Zero balance (tolerance ± 0.25% FSO)	0Vdc (M,N) 0.1Vdc (B,C)
Zero signals adjustment (tolerance ± 0.25% FSO)	"Autozero" function
Maximum allowed load	1mA
Response time (10...90% FSO)	8ms (option 1ms)
Output noise (RMS 10-400Hz)	< 0.025% FSO
Calibration signal	80% FSO
Output short circuit ingress and reverse polarity protection	YES
Compensated temperature range housing	0...+85°C
Operating temperature range housing	-30...+105°C
Storage temperature range housing	-40...+125°C
Maximum diaphragm temperature	350°C / 660°F
Zero signal variation due to process temperature variation in range (20-350°C)	< ± 1,2%FSO
Full-scale signal variation due to process temperature variation in range (20-350°C)	< ± 1%FSO
Std contact diaphragm with process	15-5 PH GTP
Thermocouple ( Model IN2)	STD: Type "J" (isolated junction) Type "K" (on request)
Protection degree (with 6-pole female connector)	IP65
Electrical connection	Conn. 6-pin VPT07RA10-6PT (PT02A-10-6P) Conn. 8-pin PC02E-12-8P

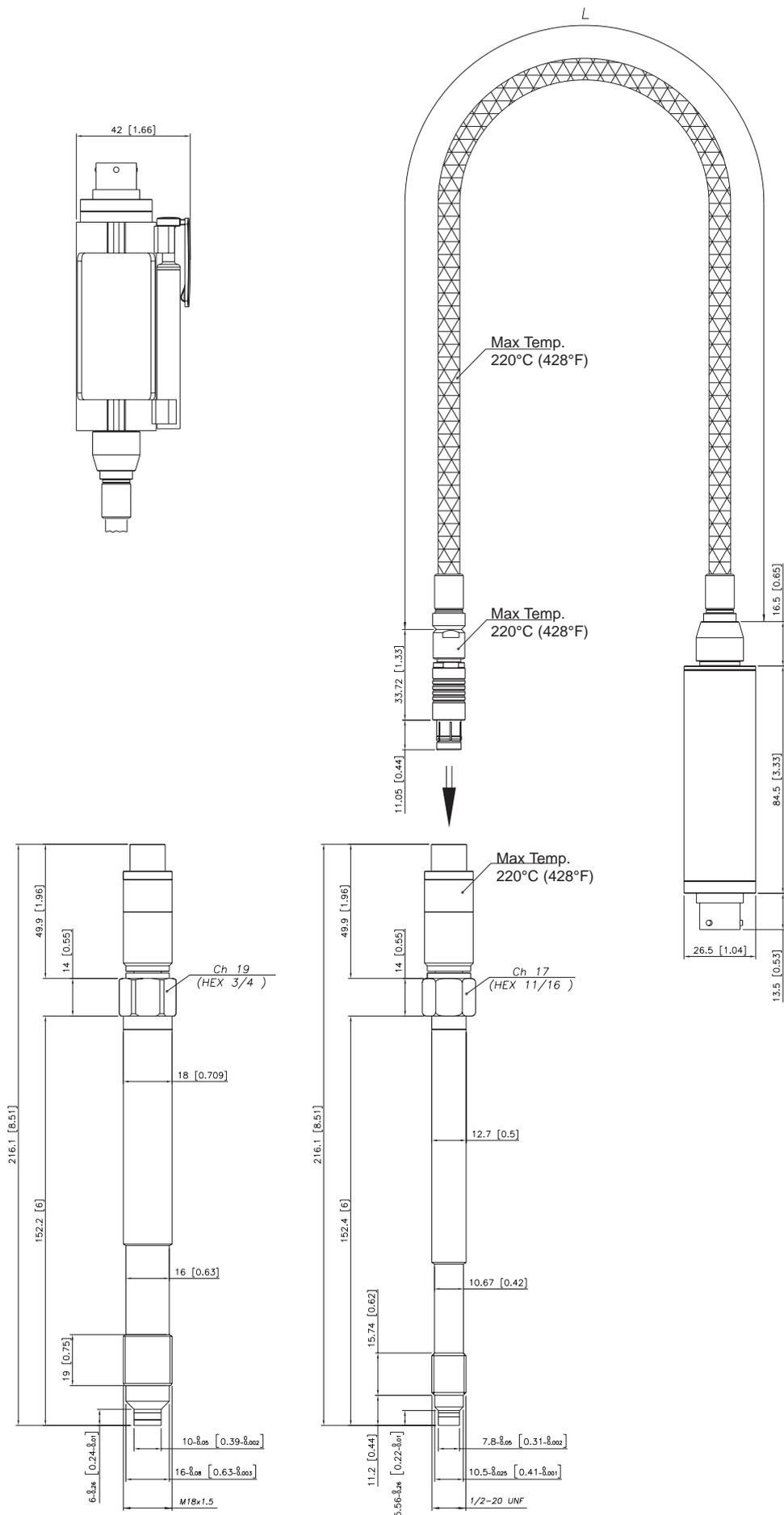
FSO = Full scale output

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



# MECHANICAL DIMENSIONS

**IN1M**

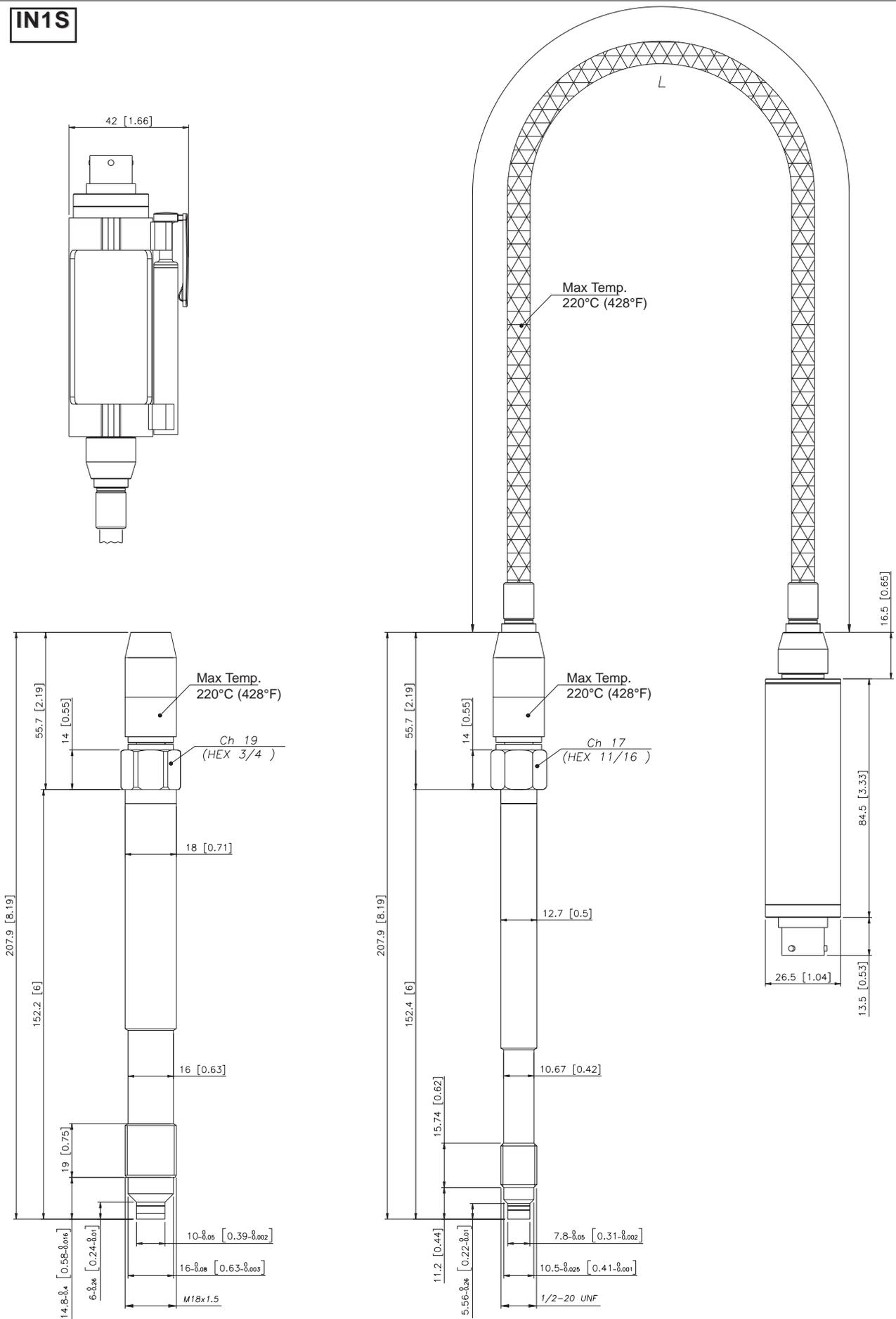


**NOTE :** dimensions refer to rigid stem length option "4" (153 mm – 6")

**WARNING :** For installation use a maximum tightening torque of 40 Nm (355 in-lb)

# MECHANICAL DIMENSIONS

**IN1S**

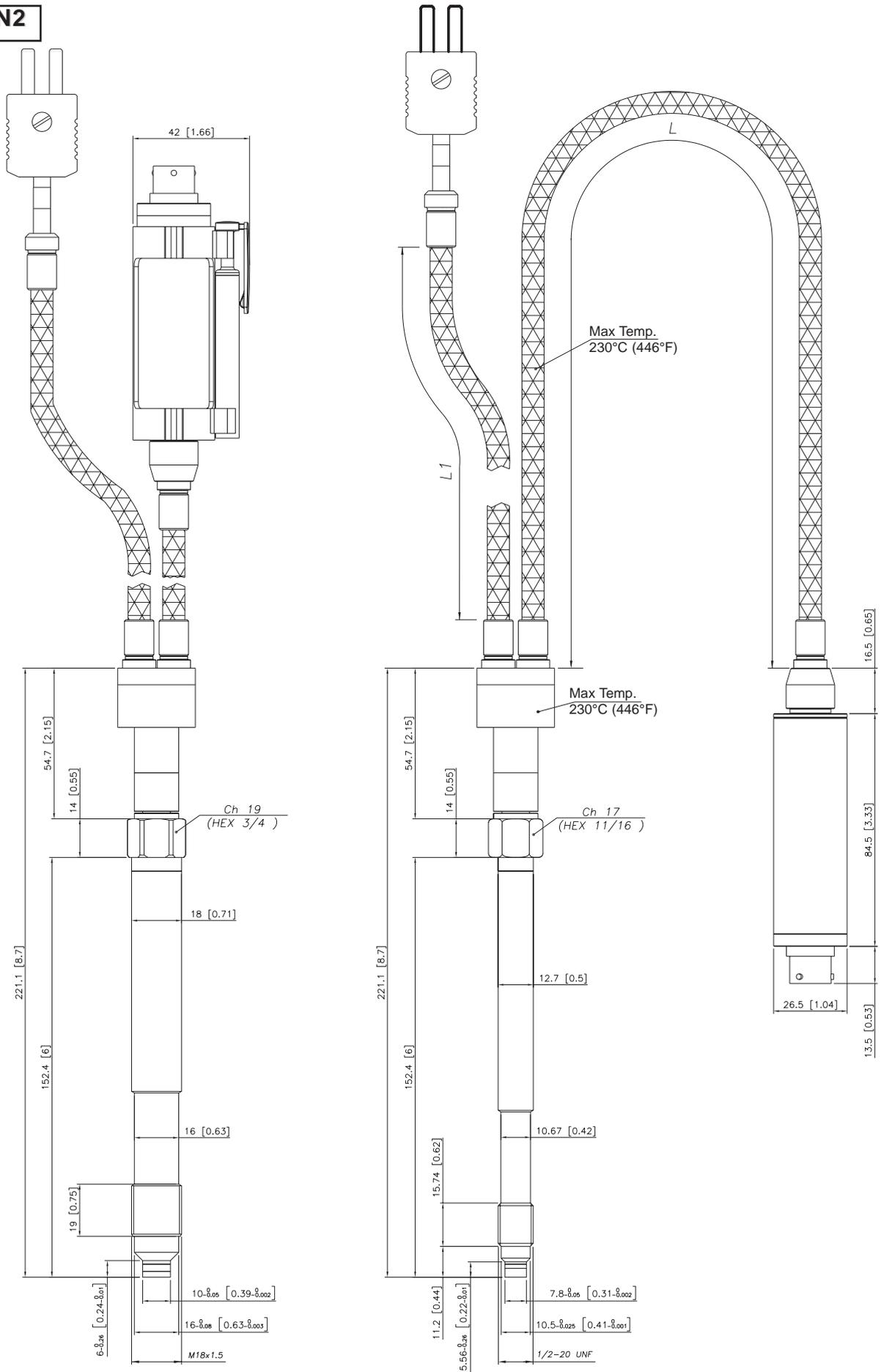


**NOTE :** dimensions refer to rigid stem length option "4" (153 mm – 6")

**WARNING :** For installation use a maximum tightening torque of 40 Nm (355 in-lb)

# MECHANICAL DIMENSIONS

**IN2**



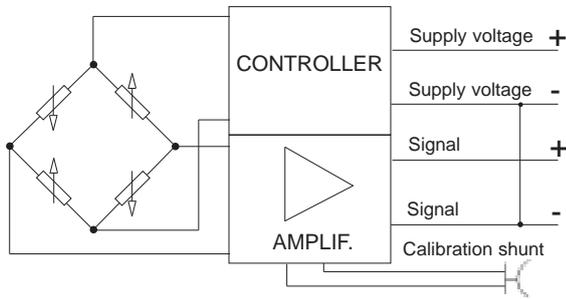
**NOTE :** dimensions refer to rigid stem length option "4" (153 mm – 6")

**WARNING :** For installation use a maximum tightening torque of 40 Nm (355 in-lb)

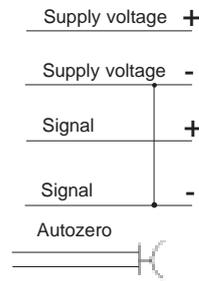
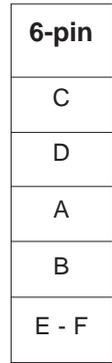
## ELECTRICAL CONNECTIONS

### VOLTAGE OUTPUT (M, N, B, C)

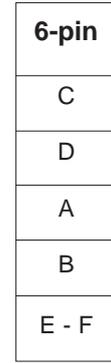
Supply 15..30Vdc



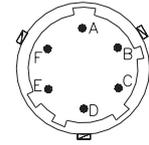
### MAGNETIC AUTOZERO



### EXTERNAL AUTOZERO

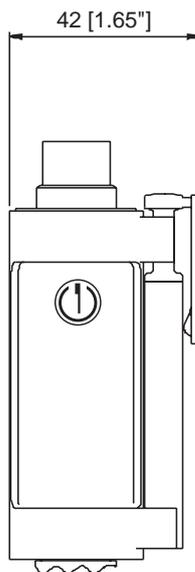


6 pin connector  
VPT07RA10-6PT2  
(PT02A-10-6P)



Shield drain wire is tied to connector via cable clamp

## AUTOZERO FUNCTION



The Autozero function is activated through a magnetic contact (external magnet supplied with the sensor).  
See the manual for a complete Autozero function explanation.

## ACCESSORIES

### Connectors

6-pin female connector (IP65 protection degree)

8-pin female connector

### 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

Other lengths

### 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

Fixing pen clip

Autozero pen

CON300

CON307

C08WLS

C15WLS

C25WLS

C30WLS

on request

SF18

SC12

SC18

KF12

KF18

CT12

CT18

PKIT309

PKIT312

### Cable color code

Conn.	Wire
A	Red
B	Black
C	White
D	Green
E	Blue
F	Orange

# ORDER CODE

I - □ - □ - □ - □ - □ - □ - □ - □ - □ - □ - □ - 000

OUTPUT SIGNAL	
0...5Vdc	<b>M</b>
0...10Vdc	<b>N</b>
0.1...5.1Vdc	<b>B</b>
0.1...10.1Vdc	<b>C</b>

VERSION	
Rigid stem	<b>0</b>
Rigid + flexible stem	<b>1</b>
With thermocouple	<b>2</b>

MECHANICS	
SINGLE	<b>S</b>
MODULAR	<b>M (*)</b>

(\*) Not available for IN0 and IN2 versions

CONNECTOR	
6 pin	<b>6</b>

ACCURACY CLASS	
0.25% FSO	<b>H</b>
0.5% FSO	<b>M</b>

RANGE			
bar		psi	
100	<b>B01C</b>	1500	<b>P15C</b>
200	<b>B02C</b>	3000	<b>P03M</b>
350	<b>B35D</b>	5000	<b>P05M</b>
500	<b>B05C</b>	7500	<b>P75C</b>
700	<b>B07C</b>	10000	<b>P10M</b>
1000	<b>B01M</b>	15000	<b>P15M</b>

000= Standard version  
Special or customized versions available on request

<b>E</b>	External autozero
-	Magnetic autozero

FLEXIBLE STEM LENGTH (mm / inches)		
<b>D</b>	457mm	18"
<b>E</b>	610mm	24"
<b>F</b>	760mm	30"

**RIGID STEM LENGTH**  
(mm / inches)

<b>4</b>	153mm	6"
<b>5</b>	318mm	12.5"

**Available on request**

<b>3</b>	76mm	3"
<b>6</b>	350mm	14"
<b>7</b>	400mm	16"
<b>8</b>	456mm	18"

THREAD	
<b>Standard</b>	
<b>1</b>	1/2 - 20 UNF
<b>4</b>	M18 x 1.5

## Examples

### **IN1S-6-M-B07C-1-4-D-000**

Melt pressure transducer without filling, 4...20mA output, 6-pin connector, 1/2-20 UNF threading, 700 bar pressure range, 0.5% precision level, 153 mm (6") rigid stem, 457 mm (18") flexible stem.

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)



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

# GEFRAN

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

DTS\_IN\_0709\_ENG