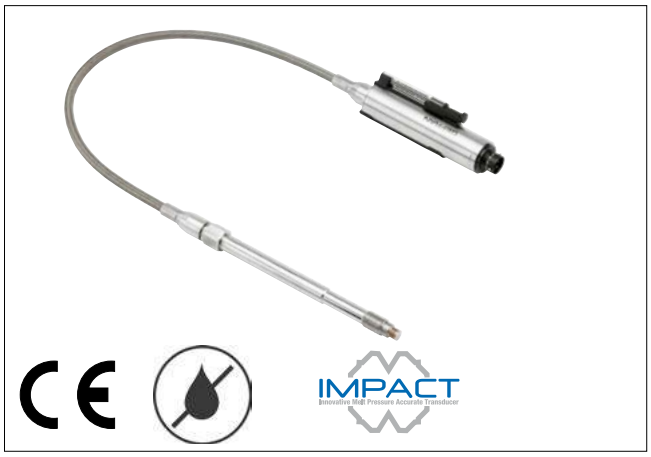
GEFRAN

IMPACT MELT PRESSURE TRANSMITTERS

I3 SERIES *mV/V Output*



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

MAIN FEATURES

- Pressure ranges:
  0-100 to 0-1000 bar / 0-1500 to 0-15000 psi
- Accuracy: < ±0.25% FS (H); < ±0.5% FS (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.

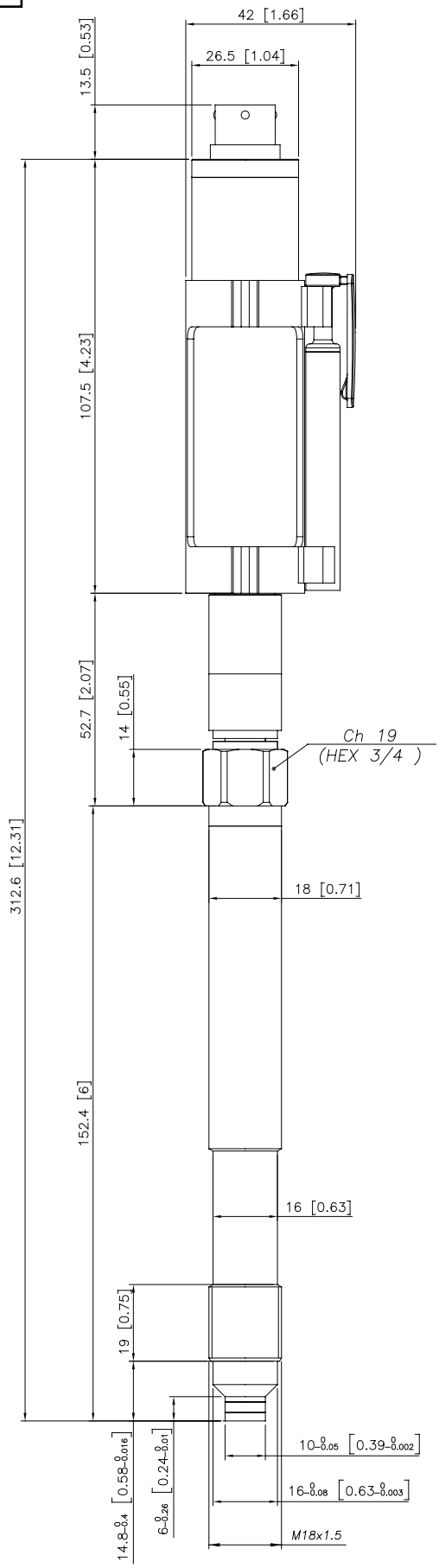
TECHNICAL SPECIFICATIONS

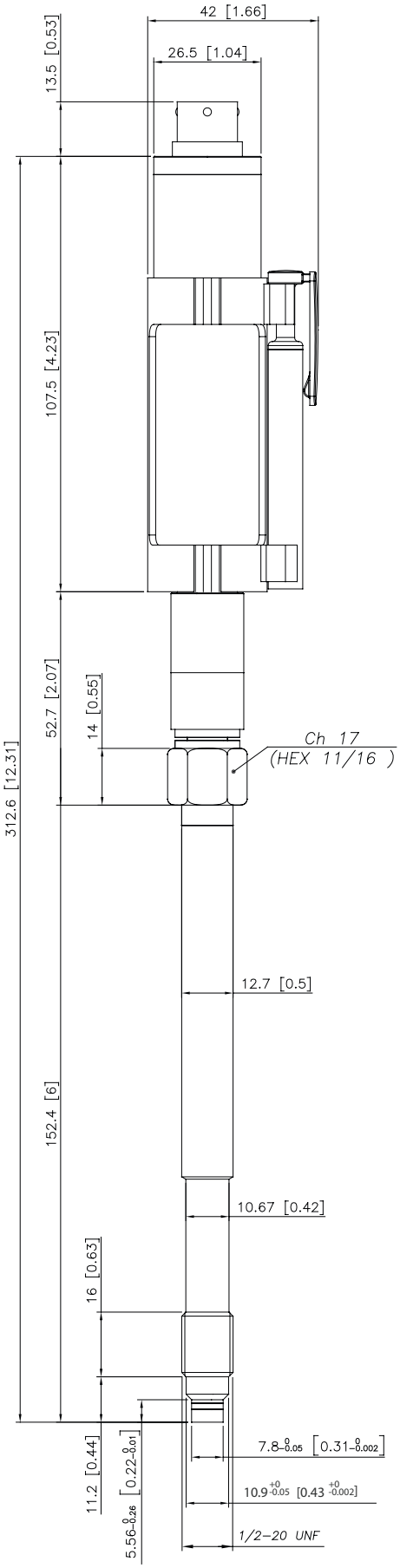
Accuracy (1)	**H** <±0.25%FS **M** <±0.5%FS
Resolution	16 bit
Measurement range	0..100 a 0..1000bar 0..1500 a 0..15000psi
Maximum overpressure (without degrading performances)	1.5 x FS (maximum pressure 1200bar/17400psi)
Measurement principle	Piezoresistive
Power supply	8...12Vdc (10Vdc tipica)
Imput impedance	350 Ohm ± 10%
Insulation resistance (at 50Vdc)	>1000 MOhm
Output signal Full Scale FS	2,5mV/V (option 2) 3,33mV/V (option 3)
Zero signals adjustment (tollerance ± 0.5% FS)	“Autozero” function
Output impedance	350 Ohm ± 10%
Response time (10...90% FS)	8ms
Output noise (RMS 10-400Hz)	< 0.025% FS
Calibration signal	80% FS
Output short circuit and supply reverse polarity protection	YES
Supply from output protection	YES
Compensed temperature range housing	0...+85°C
Operating temperature range housing	-30...+85°C
Storage temperature range housing	-40...+125°C
Thermal drift in compensated range: Zero / Calibration / Sensibility	< 0.02% FS/°C
Maximum diaphragm temperature	350°C
Zero signal variation due to process temperature variation in range (20-350°C)	< ± 1,2%FS
Span signal variation due to process temperature variation in range (20-350°C)	< ± 1%FS
Std contact diaphragm with process	15-5 PH GTP+
Thermocouple (Model I32)	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)

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

MECHANICAL DIMENSIONS

I30



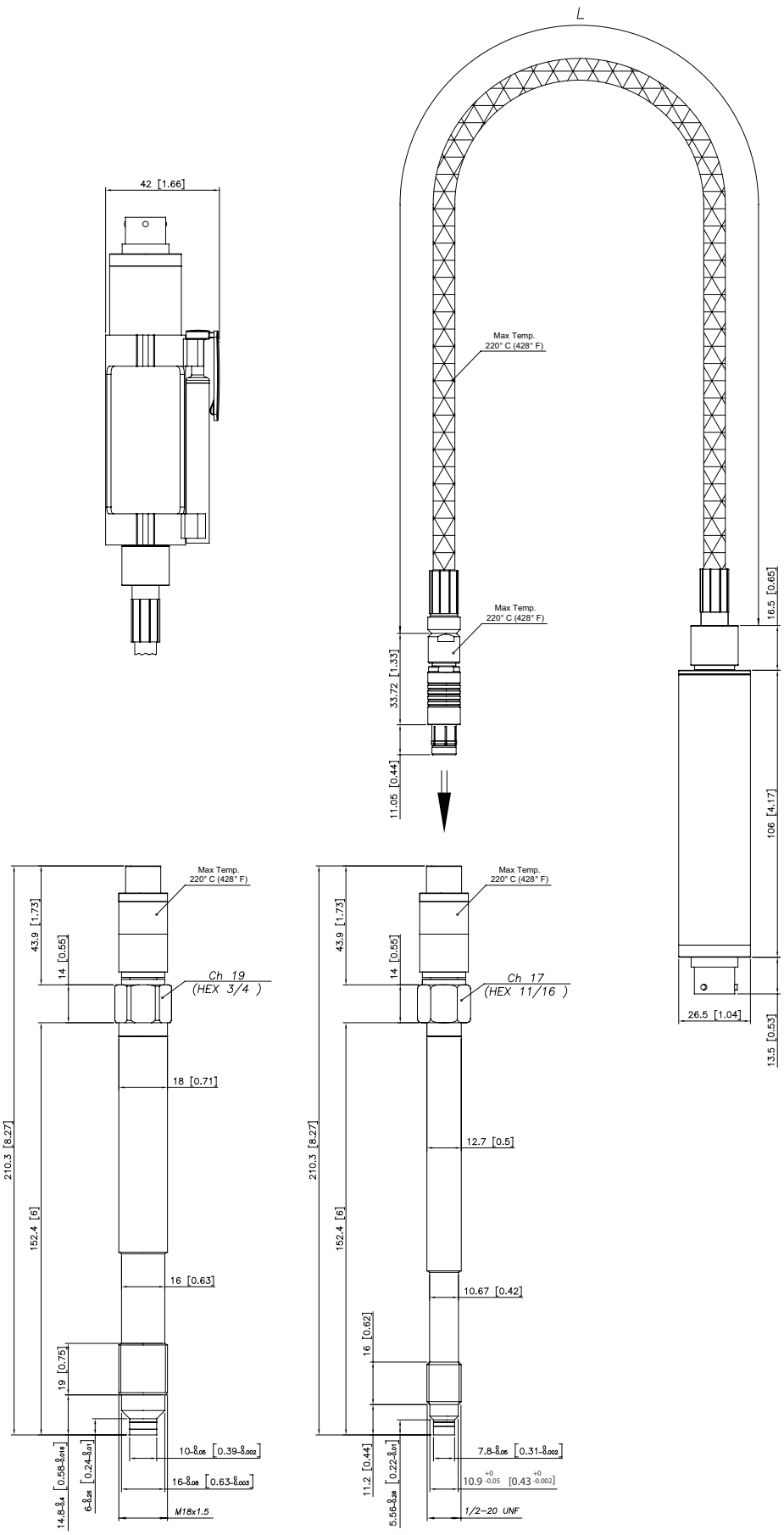


NOTE : dimensions refer to rigid stem length option “4” (153 mm – 6”)

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

MECHANICAL DIMENSIONS

I31M

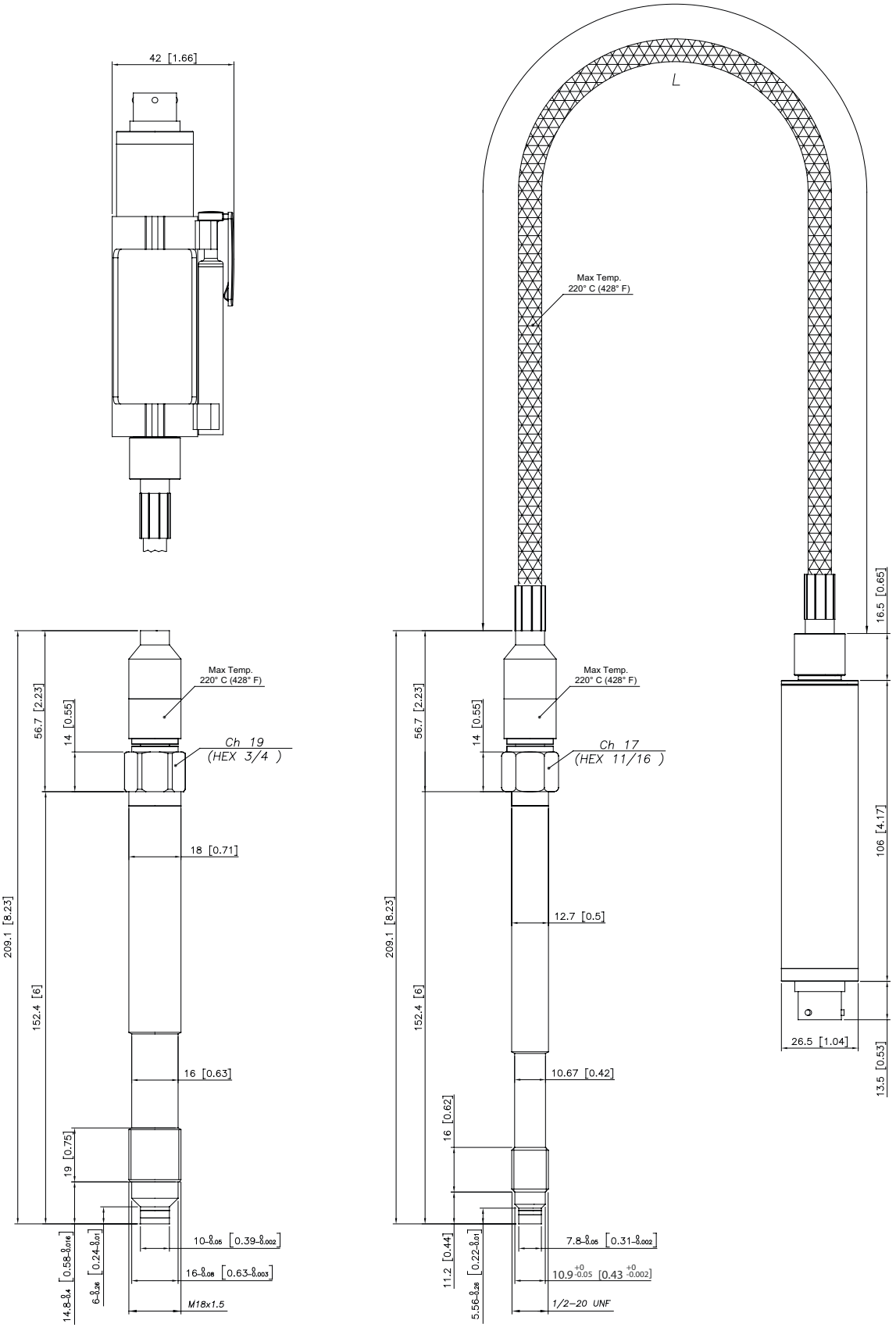


NOTE : dimensions refer to rigid stem length option “4” (153 mm – 6”)

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

MECHANICAL DIMENSIONS

I31S

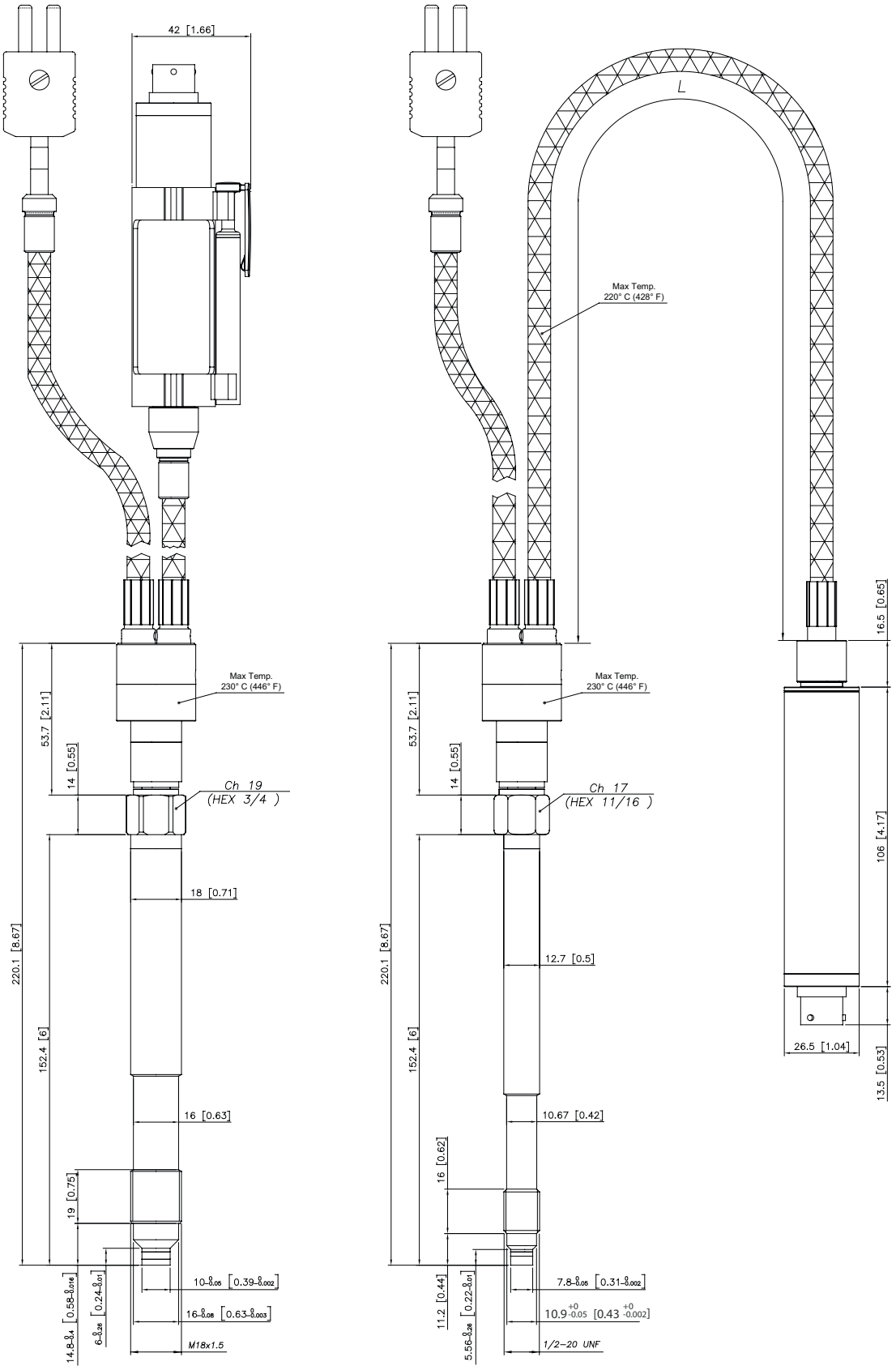


NOTE : dimensions refer to rigid stem length option “4” (153 mm – 6”)

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

MECHANICAL DIMENSIONS

I32

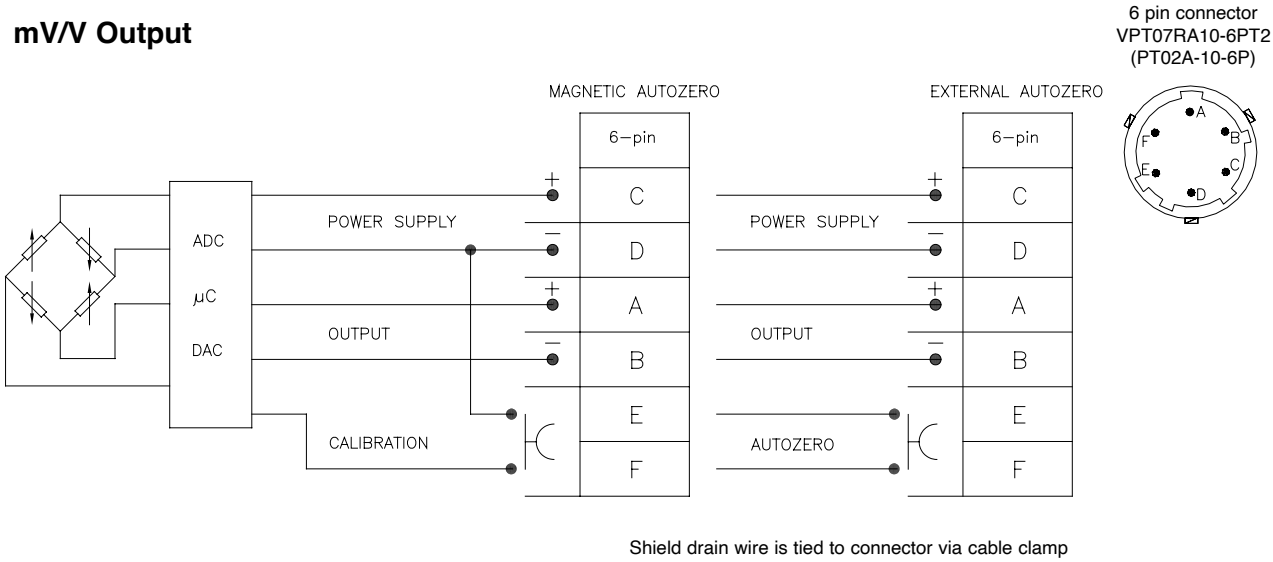


NOTE : dimensions refer to rigid stem length option “4” (153 mm – 6”)

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

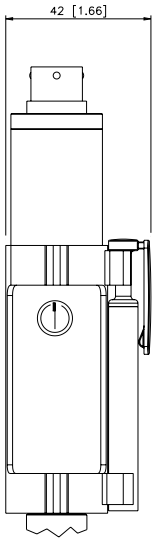
ELECTRICAL CONNECTIONS

mV/V Output



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).
For the external Autozero version short-circuit the correct pin.
See the manual for a complete Autozero function explanation.

ACCESSORIES

Connectors

6-pin female connector (IP65 protection degree)	**CON300**

Extension cables

6-pin connector with 8m (25ft) cable	**C08WLS**
6-pin connector with 15m (50ft) cable	**C15WLS**
6-pin connector with 25m (75ft) cable	**C25WLS**
6-pin connector with 30m (100ft) cable	**C30WLS**
Other lengths	**on request**

Cable color code

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

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**
Fixing pen clip	**PKIT309**
Autozero pen	**PKIT312**

ORDER CODE

I -□-□-□-□-□-□□□-□-□-□-□-000

OUTPUT SIGNAL	
2,5mV/V	**2**
3,33mV/V	**3**

VERSION	
Rigid stem	**0**
Rigid + flexible stem	**1**
With thermocouple	**2**

MECHANICS	
Single fixed	**A**
Modular fixed	**B ***
Single Floating	**S**
Modular Floating	**M ***

***** Not available for I30 and I32 versions

CONNECTOR	
6 pin	**6**

ACCURACY CLASS	
0.25% FS	**H**
0.5% FS	**M**

MEASUREMENT RANGE			
bar		psi	
10*	**B10D**	**150***	**P15D**
20	**B02D**	**300**	**P03C**
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**

* 10 bar (B01D) or 150psi (P15D) for M18x1,5 version

000= Standard version
Special or customized versions available on request

E	External autozero
-	Magnetic autozero

FLEXIBLE STEM LENGTH **(L)** (mm / inches)		
D	457mm	18”
E	610mm	24”
F	760mm	30”
RIGID STEM LENGTH (mm / inches)		
4	153mm	6”
5	318mm	12.5”
Available on request		
3	76mm	3”
6	350mm	14”
7	400mm	16”
8	456mm	18”

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

Example

I31-S-6-M-B07C-1-4-D-000
Melt pressure transmitter without filling, 3,33mV/V 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 compatibility directive
- RoHS directive

Electrical installation requirements and Conformity certificate are available on our web site: www.gefran.com

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

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