



The WE 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 quantity is transformed in a electrical measure by means the thick film strain-gauge technology.

The SIL2 certified version makes the product suitable for use in the Functional Safety applications, particularly in the process plants for the production of polymers, where it is an essential requirement.

### MAIN FEATURES

- Pressure ranges from:  
0-17 to 0-1000 bar / 0-250 to 0-15000 psi
- Accuracy: <math>\pm 0.25\%</math> FS (H); <math>\pm 0.5\%</math> FS (M)
- Fluid-filled system for temperature stability
- Oil filling meets FDA requirements CFR 178.3620 and CFR 172.878
- SIL2 approvals for Functional Safety
- 1/2-20UNF, M18x1.5 standard threads; other types available on request
- Other diaphragms available on request
- Autozero function on board / external option
- Drift Autocompensation function (SP version)
- 17-7 PH corrugated diaphragm with GTP+

*GTP+ (advanced protection)*

*Coating with high resistance against corrosion, abrasion and high temperature*

### 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.

The procedure is permitted only with pressure at zero.

### AUTOCOMPENSATES INFLUENCE OF MELT TEMPERATURE

Thanks to internal self-compensation, the WSP series transmitter cancels the effect of pressure signal variation caused by variation of Melt temperature.

This reduces at the minimum the read error caused by heating of the filling fluid (typical of all sensors built with "filled" technology).

### TECHNICAL SPECIFICATIONS

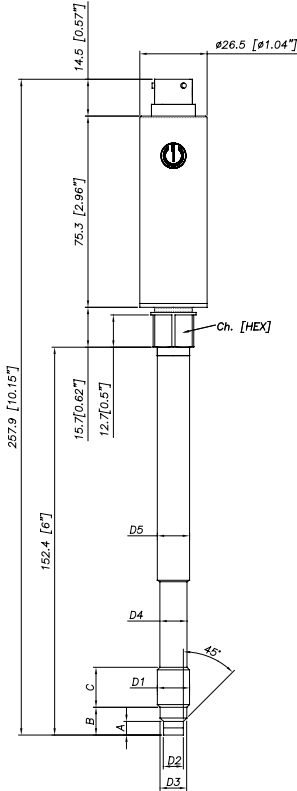
Accuracy (1)	H <math>\pm 0.25\%</math>FS (100...1000 bar) M <math>\pm 0.5\%</math>FS (17...1000 bar)
Resolution	Infinite
Measurement range	0..17 to 0..1000bar 0..250 to 0..15000psi
Maximum overpressure (without degrading performances)	2 x FS 1.5 x FS above 500bar/7500psi
Measurement principle	Extensimetric thick film
Power supply	10...30Vdc
Maximum current absorption	32mA
Insulation resistance (at 50Vdc)	>1000 MOhm
Output signal Full Scale (FS)	20mA
Zero balance (tolerance $\pm 0.25\%$ FS)	4mA
Zero signals adjustment (tolerance $\pm 0.25\%$ FS)	"Autozero" function
Span adjustment within $\pm 5\%$ FS	See Manual
Maximum allowed load	See diagram
Response time (10...90% FS)	~ 1ms
Output noise (RMS 10-400Hz)	< 0.025% FS
Calibration signal	80% FS
Output short circuit ingress and reverse polarity protection	YES
Compensated temperature range	0...+85°C
Operating temperature range	-30...+105°C
Storage temperature range	-40...+125°C
Thermal drift in compensated range: Zero / Calibration / Sensibility	< 0.02% FS/°C
Diaphragm maximum temperature	315°C / 600°F
Zero drift due to change in process temperature (zero)	< 0.04 bar/°C
Zero drift temperature for Autocompensated version (SP) within the temperature range 20°C-315°C inclusive the drift temperature of the housing	< 0.005 bar/°C 100 $\leq$ p < 500 bar 0.0022 %FS/°C p $\geq$ 500 bar
Standard material in contact with process medium	Diaphragm: • 17-7PH corrugated diaphragm with GTP+ Stem • 17-4 PH
Thermocouple (model WE2)	STD: type "J" (isolated junction)
Protection degree (with 6-pole female connector CON300)	IP66
SIL2 certification	IEC/EN 62061 IEC 61508

FS = Full scale output

(1) BFSL method (Best Fit Straight Line): includes combined effects of Non-Linearity, Hysteresis and (secondo IEC 62828-2).

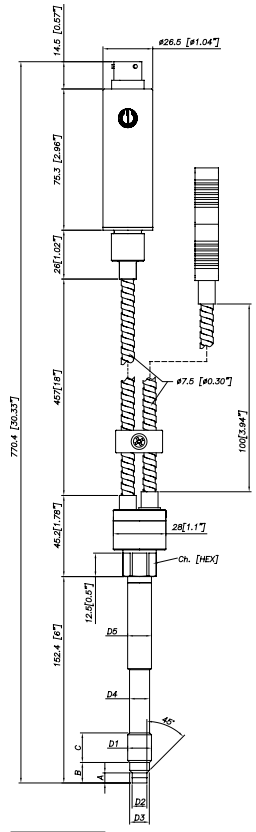
# MECHANICAL DIMENSIONS

## WE0

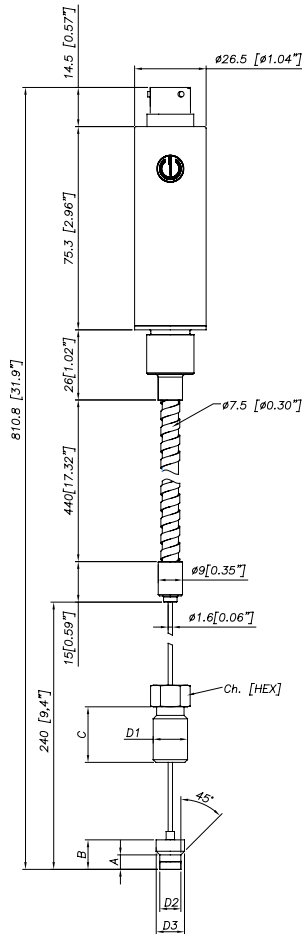


D1	<b>1/2 - 20UNF</b>
D2	$\phi 7.8 -0.05$ [ $\phi 0.31$ " -0.002 ]
D3	$\phi 10.5 -0.025$ [ $\phi 0.41$ " -0.001 ]
D4	$\phi 10.67$ [ $\phi 0.42$ " ]
D5	$\phi 12.7$ [ $\phi 0.5$ " ]
A	5.56 -0.26 [ 0.22" -0.01 ]
B	11.2 [ 0.44" ]
C	15.74 [ 0.62" ]
Ch	16
[Hex]	[ 5/8" ]

## WE2



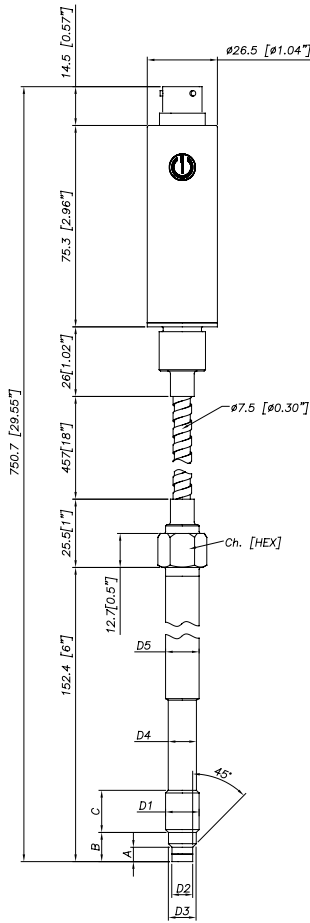
## WE3



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]

D1	<b>M18x1.5</b>
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	19
[Hex]	[ 3/4" ]

## WE1

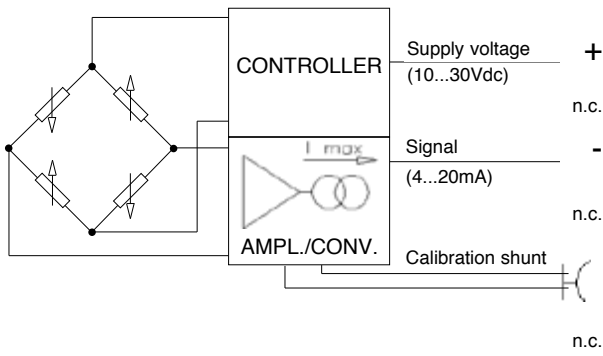


**NOTE :** dimensions refer to rigid stem length option "4" (153 mm – 6")

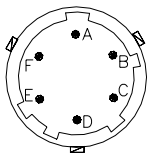
**WARNING :** For installation use a maximum tightening torque of 56 Nm(500 in-lb)

# ELECTRICAL CONNECTIONS

## CURRENT OUTPUT (4...20mA, two wires)



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



8 pin connector  
PC02E-12-8P Bendix



## MAGNETIC AUTOZERO

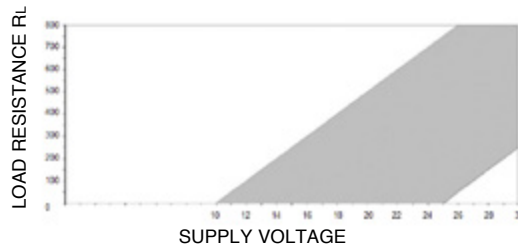
6-pin	8-pin
A	B
C	A
B	D
D	C
E - F	E - F
	G - H

Shield drain wire is tied to connector via cable clamp

## EXTERNAL AUTOZERO

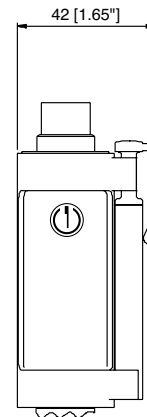
6-pin	8-pin
A	B
C	A
B	D
D	C
E - F	E - F
	G - H

## LOAD DIAGRAM



The diagram shows the optimum ratio between the load and supply voltage of the 4...20mA transmitter. For a correct use, choose any combination of load resistance and supply voltage, in the shaded area.

## 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 mating connector (IP66 protection degree)  
8-pin mating 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  
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  
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

### Thermocouple for WE2 model

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

CON300  
CON307

C08WLS  
C15WLS  
C25WLS  
C30WLS  
E08WLS  
E15WLS  
E25WLS  
E30WLS  
consult factory

SF18  
SC12  
SC18  
KF12  
CT12  
CT18

TTER 601

Cable color code 6 wires		Cable color code 8 wires	
Conn.	Wire	Conn.	Wire
A	Red	A	White
B	Black	B	Red
C	White	C	Green
D	Green	D	Black
E	Blue	E	Blue
F	Orange	F	Orange
		G	n.c.
		H	n.c.

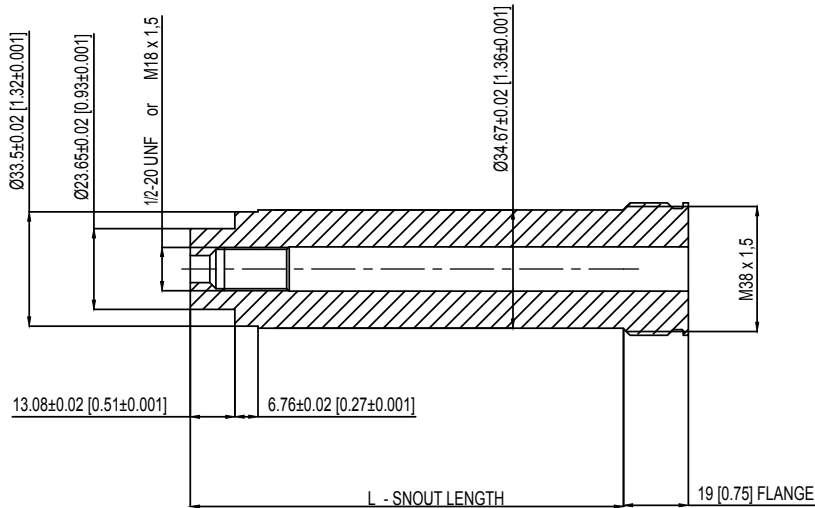
# PROCESS FLANGE ADAPTER

The process flange adapter is a sensor accessory that allows for the installation of 1/2-20 UNF or M18x1.5 melt pressure sensor in a button seal style process mounting port. The adapter is made with an adapter body with different snout lengths plus an adapter flange available in different sizes (see tables and drawing below). Each combination of snout and flange is available according to the ordering information with a specific ordering code.

## SPECIFICATIONS

- Pressure range: according to the selected sensor (up to 1000 bar/15000 psi max)
- Temperature range: according to the selected sensor
- Material of construction: 17-4PH Stainless steel

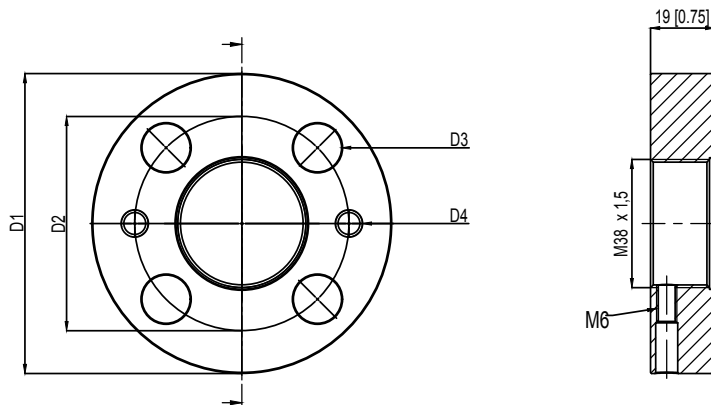
## ADAPTER BODY



1/2-20 UNF	L - SNOUT LENGTH
STE1020	127 [5]
STE1021	51,6 [2,031]

M18 X 1,5	L - SNOUT LENGTH
STE1022	127 [5]
STE1023	51,6 [2,031]

## ADAPTER FLANGE



	FLA960	FLA961
D1	82,6 [3,25]	88,9 [3,50]
D2	54 [2,14]	63,5 [2,50]
D3	13,2 [0,52]	14,3 [0,56]
D4	5/16-18 UNC	5/16-18 UNC

## ORDER CODE

KIT - 5 - 0 - 1

Snout length	
5 inch [127 mm]	5
2,031 inch [51,6 mm]	2

Flange type (see technical drawing)	
FLA960	0
FLA961	1

Thread dimensions	
1/2-20 UNF	1
M18 x 1,5	4

ADAPTER GASKETS			
Material	Dimensions	Max Pressure	Ord. Code
Aluminium	30.2 mm [1.19"] OD 24.1 mm [.950"] ID	200 bar/3000 psi	RON360
AISI 303 SS	30.2 mm [1.19"] OD 24.1 mm [.950"] ID	700 bar/10000 psi	RON361

## Example:

### KIT501

Process adapter with 5" snout length, 82.6 mm size flange, suitable for 1/2-20 UNF melt sensor

## ORDER CODE

W - - - - - 000

Autocompensation (*)	<b>SP</b>
Standard	-

(\*) available for ranges > to 100bar  
 (\*) not available for WE3 version

<b>OUTPUT SIGNAL</b>	
4...20mA	<b>E</b>

<b>CONFIGURATION</b>	
Rigid stem	<b>0</b>
Rigid stem + flexible	<b>1</b>
With thermocouple	<b>2</b>
Exposed capillary	<b>3</b>

<b>CONNECTOR</b>	
Standard	
6 pin	<b>6</b>
8 pin	<b>8</b>

<b>ACCURACY CLASS</b>	
0.25% FS (ranges ≥ 100 bar/1500 psi)	<b>H</b>
0.5% FS	<b>M</b>

<b>RANGE</b>			
bar		psi	
17	<b>B17U</b>	250	<b>P25D</b>
35	<b>B35U</b>	500	<b>P05C</b>
50	<b>B05D</b>	750	<b>P75D</b>
70	<b>B07D</b>	1000	<b>P01M</b>
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>

Example

**WE2-6-M-B07C-1-4-D-S**

Melt pressure transmitter with type “J” thermocouple, 4...20mA output, 6-pin connector, 1/2-20UNF thread, 700 bar full scale, 0,5% accuracy class, 153 mm (6”) rigid stem, 457mm (18”), SIL2 certification.

Sensors are manufactured in compliance with:

- EMC compatibility directive: 2014/30/EU
- RoHS directive: 2011/65/EU
- MACHINERY directive: 2006/42/EC

Electrical installation requirements and Conformity certificate are available on our web site: [www.gefran.com](http://www.gefran.com)

000= Standard version  
 Special or customized versions available on request

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

<b>S</b>	SIL2 certification
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**FLEXIBLE LENGTH**  
 (mm / inches)

**Standard (WE0)**

<b>0</b>	none
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**Standard (WE1, WE2)**

<b>D</b>	457mm	18”
<b>E</b>	610mm	24”
<b>F</b>	760mm	30”

**Standard (WE3)**

<b>L</b>	711mm	28”
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**Available on request**

<b>A</b>	76mm	3”
<b>B</b>	152mm	6”
<b>C</b>	300mm	12”
<b>G</b>	914mm	36”
<b>H</b>	1067mm	42”
<b>I</b>	1220mm	48”
<b>J</b>	1372mm	54”
<b>K</b>	1520mm	60”

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

**Standard (WE0, WE1, WE2)**

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

**Standard (WE3)**

<b>0</b>	none
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**Available on request**

<b>1</b>	38mm	1.5”
<b>2</b>	50mm	2”
<b>3</b>	76mm	3”
<b>6</b>	350mm	14”
<b>7</b>	400mm	16”
<b>8</b>	456mm	18”

**THREAD**

**Standard**

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

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

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

