

# GEFRAN

## EXPLOSIONPROOF MELT PRESSURE TRANSMITTER (OIL-FILLED)

WF SERIES

2-wire 4–20 mA



The entire amplifier/sensor assembly of an WF Series Melt Pressure Transmitter is packaged in a stainless steel welded enclosure with a conduit cable fitting. This metal enclosure is completely sealed from the atmosphere, and is approved to meet hazardous area requirements

The WF converts applied pressure at the point of measurement to a proportional voltage output signal. An amplifier converts the strain gage signal to a 4-20 mA output. The small capillary tube filled with a special medium isolates the amplifier from potential thermal damage.

### MAIN FEATURES

- Factory Mutual approved Explosionproof for Class I, Division 1, Groups A, B, C, D, and Dust-Ignitionproof for Class II, Division 1, Groups E, F, G
- Other approvals: CE, NEMA 4/IP65
- High-level output 2-wire, 4-20 mA
- Accuracy:  $<\pm 0.25\%$  FSO (H);  $<\pm 0.5\%$  FSO (M)
- Internally generated 80% calibration signal (R-Cal)
- 1/2-20 UNF thread standard, M18x1.5 also available
- Fluid-filled system for temperature stability
- 17-7 PH corrugated diaphragm with TiN (Titanium Nitride) coating standard
- Oil-fill is FDA approved — meets requirements CFR172.3620 and 172.878

**WF0** The rigid stem configuration makes installation fast and easy.

**WF1** The flexible configuration is designed for applications requiring further thermal isolation or where installation would be otherwise difficult or impractical.

**WF2** The pressure/temperature configuration requires only one mounting hole for the measurement of both process values.

**WF3** The exposed capillary configuration is ideal to fit in space-restricted locations.

### TECHNICAL SPECIFICATIONS

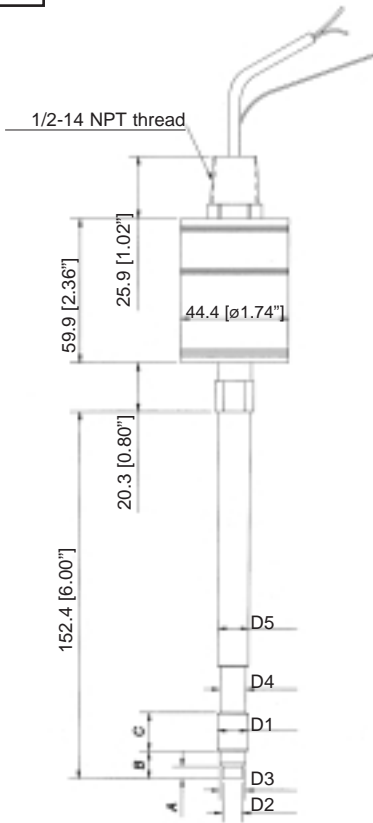
Nominal Accuracy including Linearity, Repeatability, Hysteresis	H $<\pm 0.25\%$ FSO for ranges 350bar (5000psi) and above M $<\pm 0.50\%$ FSO for ranges below 350 bar (5000 psi)
Resolution	Infinite
Measurement Range	0–35 to 0–1000 bar 0-500 to 0-15000psi
Maximum Overpressure	2 x FSO (500bar [7500psi] and below) 1.5 x FSO (above 500bar [7500psi])
Measurement Principle	Strain gage Wheatstone bridge
Supply Voltage	12-30 VDC (24 VDC rec.)
Maximum Current Consumption	20 mA
Isolation Resistance (at 50 VDC)	$> 1000 \text{ M}\Omega$
Full Scale Output (FSO)	20 mA
Zero Balance	4 mA
Signals Adjustment Nominal Pressure Ambient Pressure	5% FSO min. 10 bar (150 psi)
Response Time (10 to 90% FSO)	$\sim 8 \text{ ms}$
Output Noise (RMS 10–400 Hz)	$< 0.05\%$ FSO
Calibration Signal	80% FSO
Protect. Against Output Short Circuit and Supply Voltage Inverted Polarity	YES
Protection Against Output Voltage Spikes	YES according to 89/336/EEC
Strain Gage Housing Compensated Temperature Range	0°C to 76°C (32°F to 170°F)
Housing Temperature Range	-30–85°C (-22–185°F)
Thermal Drift * in Zero shift Compensated Range Sensitivity shift	2.0%/100°C (1.0%/100°F) 2.0%/100°C (1.0%/100°F)
Maximum Diaphragm Temperature	315°C / 600°F
Maximum Zero Drift due to Change in Process Temperature	0.04 bar/°C (30 psi/100°F)
Material in contact with process medium	Standard Corrugated 17-7PH SS (Titanium Nitride coated)

FSO = Full Scale Output (output signal at nominal pressure)

\* For ranges below 70 bar [1000 psi], zero and sensitivity shift are 6.0%/100°C (3.0%/100°F)

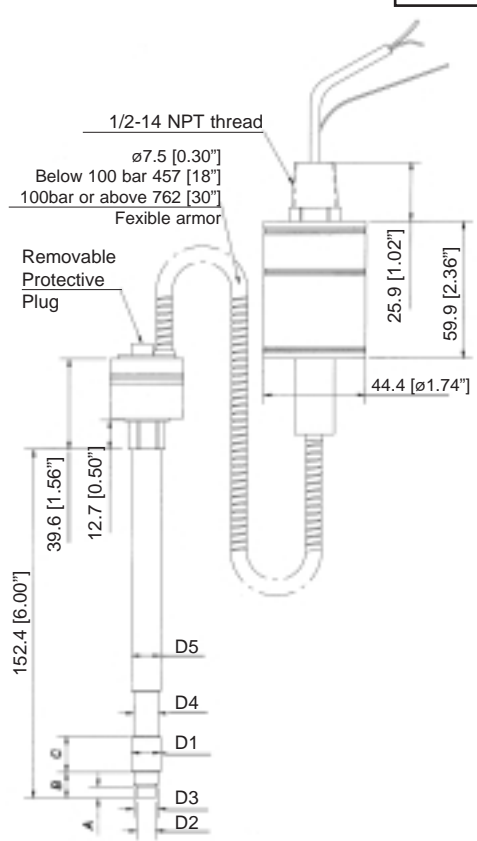
# MECHANICAL DIMENSIONS

**WF0**



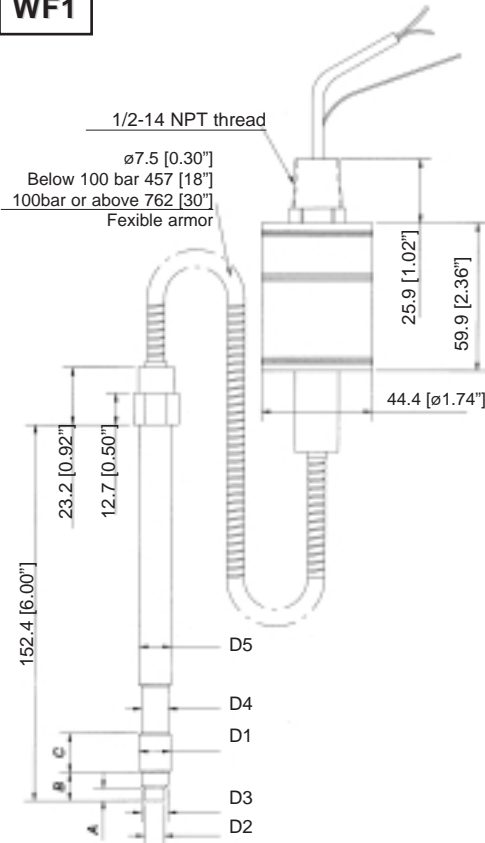
D1	<b>1/2-20 UNF</b>
D2	ø7.8 -0.05
D3	ø10.49 ±0.025
D4	ø10.67
D5	ø12.7
A	5.56 -0.26
B	11.4
C	15.75
Ch	16
[Hex]	[5/8"]

**WF2**



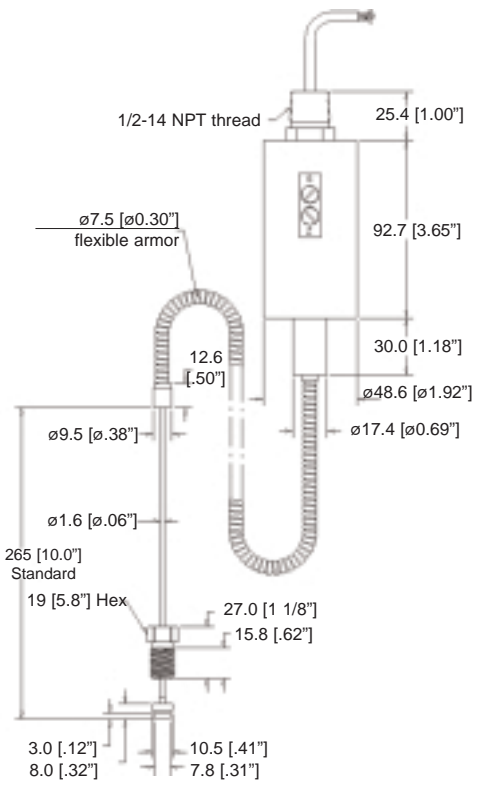
D1	<b>M18x1.5</b>
D2	ø10 -0.05
D3	ø16 -0.08
D4	ø16 -0.4
D5	ø18
A	6 -0.26
B	14.8 -0.4
C	19
Ch	19
[Hex]	[3/4"]

**WF1**



D1	<b>M18x1.5</b>
D2	ø10 -0.05
D3	ø16 -0.08
D4	ø16 -0.4
D5	ø18
A	6 -0.26
B	14.8 -0.4
C	19
Ch	19
[Hex]	[3/4"]

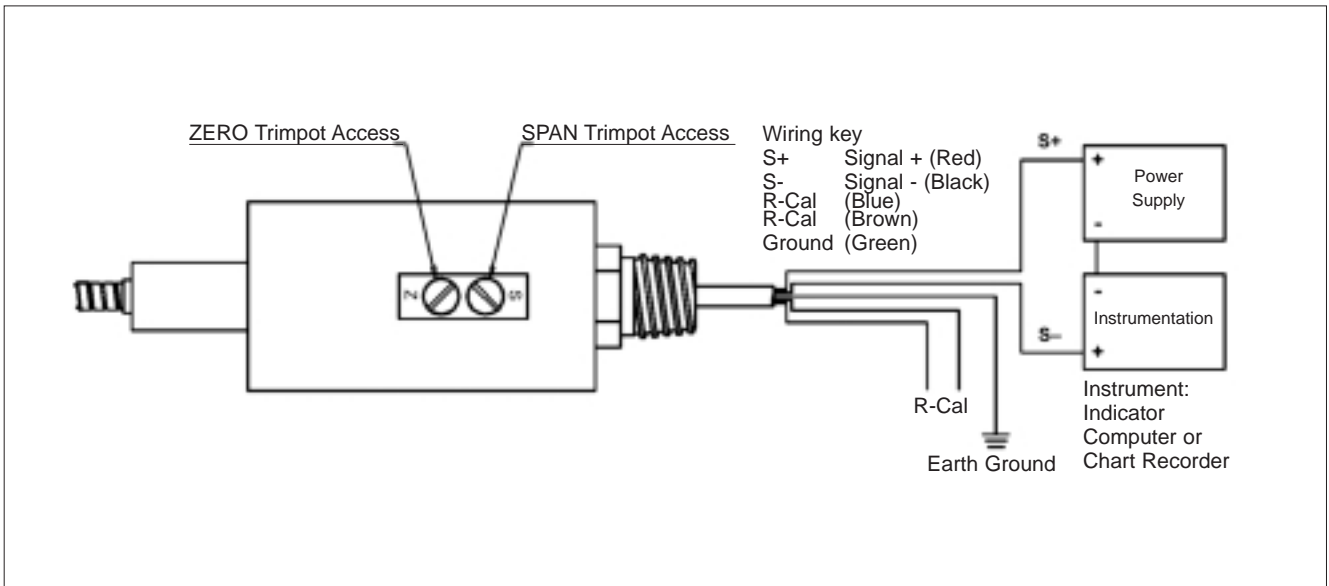
**WF3**



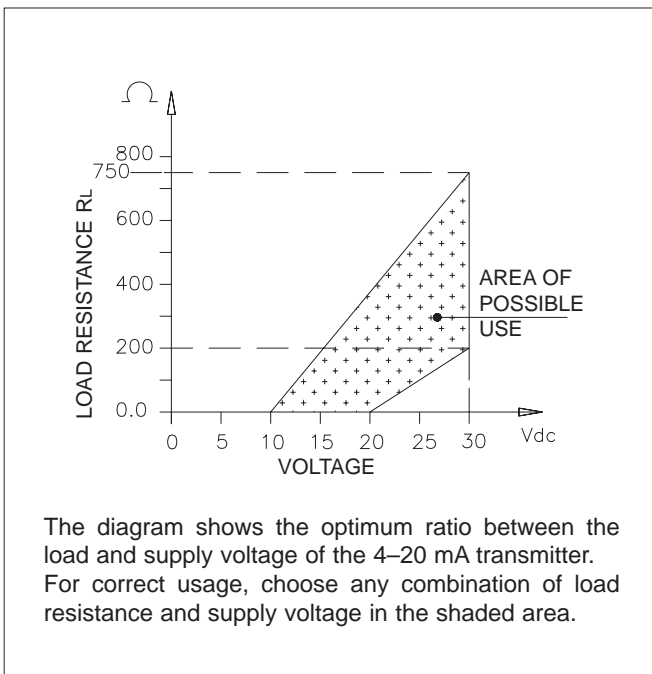
**NOTE :** dimensions refer to rigid stem length option "4" (153 mm – 6")

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

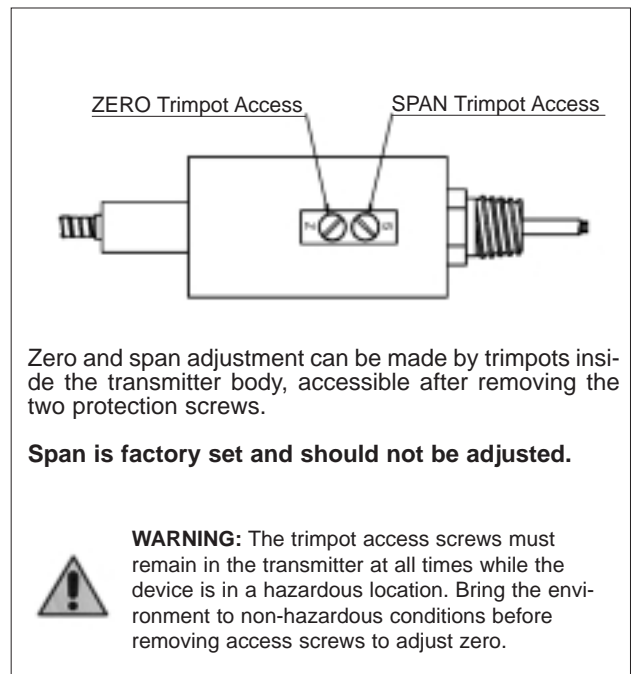
## ELECTRICAL CONNECTIONS



## LOAD DIAGRAM FOR CURRENT OUTPUT



## ADJUSTMENTS



## ACCESSORIES

Mounting bracket .....	<b>.SF18</b>
Dummy plug for 1/2-20UNF .....	<b>.SC12</b>
Dummy plug for M18x1.5 .....	<b>.SC18</b>
Drill kit for 1/2-20UNF .....	<b>.KF12</b>
Drill kit for M18x1.5 .....	<b>.KF18</b>
Cleaning kit for 1/2-20UNF .....	<b>.CT12</b>
Cleaning kit for M18x1.5 .....	<b>.CT18</b>

## ORDER CODE

WF - N - - - - - - - - - 000

OUTPUT SIGNAL	
4-20 mA Explosionproof	F

VERSION	
Rigid Stem	0
Rigid Stem + Flex	1
With Thermocouple	2
Exposed Capillary	3

CONNECTOR	
NPT	N

ACCURACY CLASS	
0.25% FSO (ranges $\geq$ 350 bar/5000 psi)	H
0.50% 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

000 = standard version  
Special or customized versions available on request

FLEXIBLE LENGTH* (mm, inches)	
<b>Standard (WF0)</b>	
0	none
<b>Standard (WF1, WF2)</b>	
D	457 mm, 18"
E	610 mm, 24"
F	760 mm, 30"
<b>Standard (WF3)</b>	
L	711 mm, 28"
<b>Available on request</b>	
A	76 mm, 3"
B	153 mm, 6"
C	300 mm, 12"

RIGID STEM LENGTH* (mm, inches)	
<b>Standard (WF0, WF1, WF2)</b>	
4	153 mm, 6"
5	318 mm, 12.5"
<b>Standard (WF3)</b>	
0	none
<b>Available on request</b>	
1	38 mm, 1.5"
2	50 mm, 2"
3	76 mm, 3"
6	350 mm, 14"
7	400 mm, 16"
8	457 mm, 18"

THREAD	
<b>Standard</b>	
1	1/2-20 UNF
4	M18x1.5
<b>Available on request</b>	
2	M10x1.0
3	M14x1.5

\* **Note:** Maximum overall length (sum of flex and stem) is 912 mm (36")

### Examples

#### **WF2-N-H-B07C-1-4-D-000**

Oil-filled explosionproof melt pressure transmitter with thermocouple access, 1/2-20 UNF thread, 700 bar full scale output, 0.25% accuracy class, 153 mm (6") rigid stem, 457 mm (18") flexible armor

#### **WF0-N-M-P01M-1-4-0-000**

Oil-filled explosionproof melt pressure transmitter, rigid stem, 1/2-20 UNF thread, 1000 psi full scale output, 0.50% accuracy class, 153 mm (6") rigid stem

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

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