

The WE Performance Level 'c' 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 trasmission of the pressure.

The fluid-filled system assures the temperature stability.

The phisical measure is transformed in a electrical measure by means of thick film on stainless steel technology.

#### MAIN FEATURES

- Pressure ranges from:  
0-17 to 0-1000 bar / 0-250 to 0-15000 psi
- Accuracy: <  $\pm 0.25\%$  FSO (H); <  $\pm 0.5\%$  FSO (M)
- Fluid-filled system for temperature stability
- Oil filling meets FDA requirements CFR 178.3620 and CFR 172.878
- Oil filling volume:  
WE0 (30mm<sup>3</sup>); WE1, WE2, WE3 (40mm<sup>3</sup>)
- 1/2-20UNF, M18x1.5 standard threads; other types available on request
- Other diaphragms available on request
- Autozero function on board / external option
- 17-7 PH corrugated diaphragm with GTP+ coating

*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.

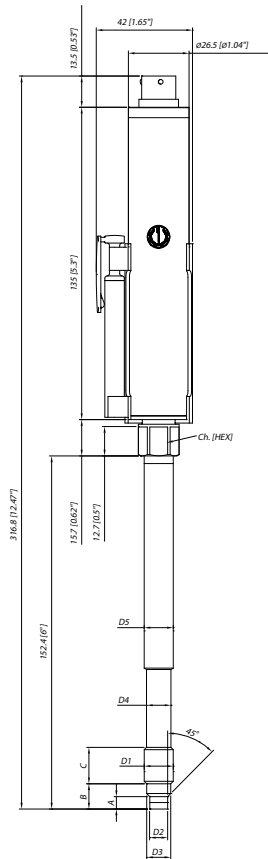
#### TECHNICAL SPECIFICATIONS

|  |  |
|--|--|
| Accuracy (1)   | H <math>\leq \pm 0.25\% \text{FSO}</math> (100...1000 bar)<br>M <math>\leq \pm 0.5\% \text{FSO}</math> (17...1000 bar) |
| Resolution   | 16 bit   |
| Measurement range  | 0..17 a 0..1000bar<br>0..250 a 0..15000psi   |
| Maximum overpressure (without degrading performances)                | 2 x FS<br>1.5 x FS oltre i 500bar/7500psi  |
| Measurement principle  | Extensimetric  |
| Power supply   | 13...30Vdc   |
| Maximum current absorption   | 23mA<br>(40mA with relay optional)   |
| Output signal Full Scale FSO   | 20mA   |
| Zero balance (tolerance $\pm 0.25\%$ FSO)                            | 4mA  |
| Response time (10...90% FSO)   | 8ms  |
| Output noise (RMS 10-400Hz)  | < 0.025% FSO   |
| Calibration signal   | 80% FSO  |
| Power supply polarity reverse protection                             | YES  |
| Compensated 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% FSO/°C   |
| Diaphragm maximum temperature  | 315°C / 600°F  |
| Zero drift due to change in process temperature (zero)               | < 0.04 bar/°C  |
| Standard material in contact with process medium                     | Diaphragm:<br>• 17-7 PH corrugated diaphragm with GTP+<br>Stem: • 17-4 PH  |
| Thermocouple (model WE2)   | STD : type "J" (isolated junction)   |
| Protection degree (with 6-pole female connector)                     | IP65   |

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

# MECHANICAL DIMENSIONS

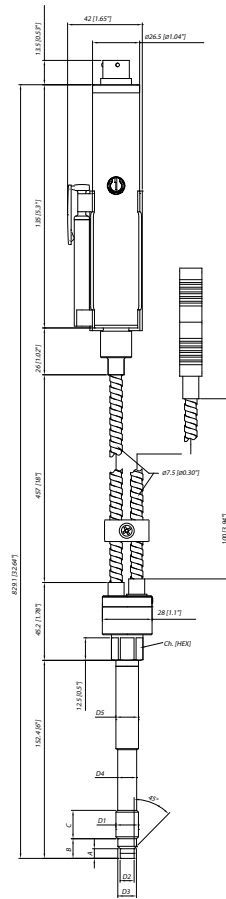
**WE0**



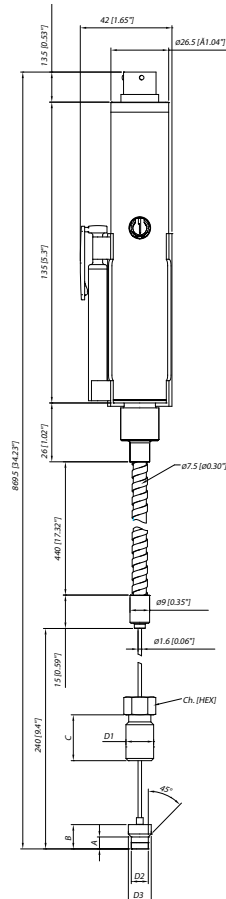
|             |  |
|-------------|--|
| D1          | <b>1/2 - 20UNF</b>   |
| D2          | $\varnothing 7.8 - 0.05$<br>[ $\varnothing 0.31'' - 0.002$ ]   |
| D3          | $\varnothing 10.5 - 0.025$<br>[ $\varnothing 0.41'' - 0.001$ ] |
| D4          | $\varnothing 10.67$<br>[ $\varnothing 0.42''$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

|             |  |
|-------------|--|
| D1          | <b>M18x1.5</b>   |
| D2          | $\varnothing 10 - 0.05$<br>[ $\varnothing 0.394'' - 0.002$ ] |
| D3          | $\varnothing 16 - 0.08$<br>[ $\varnothing 0.63'' - 0.003$ ]  |
| D4          | $\varnothing 16 - 0.4$<br>[ $\varnothing 0.63'' - 0.016$ ]   |
| D5          | $\varnothing 18$<br>[ $\varnothing 0.71''$ ]                 |
| A           | 6 - 0.26<br>[ $0.24'' - 0.01$ ]                              |
| B           | 14.8 - 0.4<br>[ $0.58'' - 0.016$ ]                           |
| C           | 19<br>[ $0.75''$ ]   |
| Ch<br>[Hex] | 19<br>[ $3/4''$ ]  |

**WE2**



**WE3**



**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)

## SELF DIAGNOSTICS

Below the conditions detected by the sensor self-diagnostics:

- Cut cable / device non connected / broken power supply, output <3.6mA
- Pin detachment, output >21mA
- Pressure above 200% of the span, output >21mA
- Voltage monitor in case of overvoltage/undervoltage/voltage variation in the electronics, output <3.6mA
- Program sequence error, output <3.6mA
- Overtemperature on the electronics, output <3.6mA
- Error on the primary element output or on the first amplification stage, output <3.6mA

## OPTIONAL RELAY OUTPUT FOR EXCESS PRESSURE PROTECTION

Safety relay characteristics:

- Activation threshold to be defined in the order code
- Rated carry current: 1A
- Rated voltage: 24Vdc  $\pm$  20%
- Switch accuracy: 2 x sensor accuracy
- Hysteresis: 2% FSO

| SUPPLY | OUTPUT         | RELAY STATUS |
|--------|----------------|--------------|
| OFF    | -              | OPEN         |
| ON     | < X%fs         | CLOSED       |
| ON     | > X%fs         | OPEN         |
| ON     | output < 3,6mA | OPEN         |
| ON     | output > 21mA  | OPEN         |

## NAMUR COMPLIANCE

The sensors are tested according to Namur NE21 recommendations. The same compatibility is valid for the NE43 Namur recommendation with the following sensor behaviour in case of breakdown:

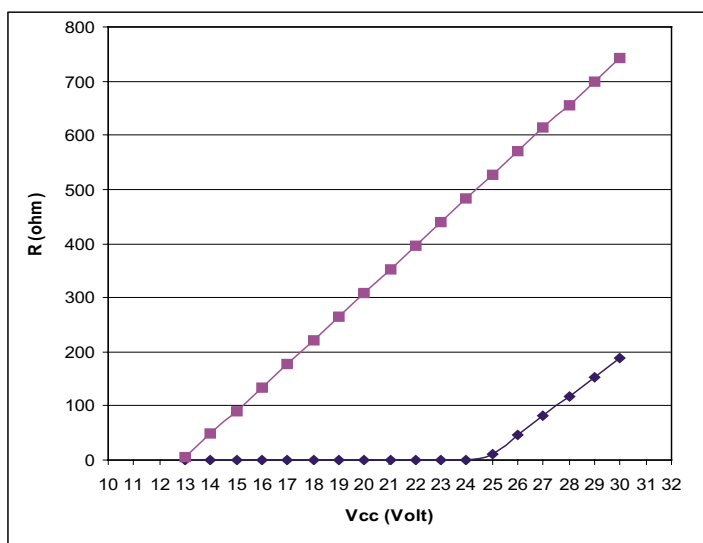
- Cut cable: breakdown information as the signal is <3,6mA
- Device not connected: breakdown information as the signal is <3,6mA
- Broken power-supply: breakdown information as the signal is <3,6mA or in case of performance problems:
- most common failures on primary sensors: the signal goes to >21mA

Note: in all the remaining situations, the output signal is always included between 3,6 and 21mA.



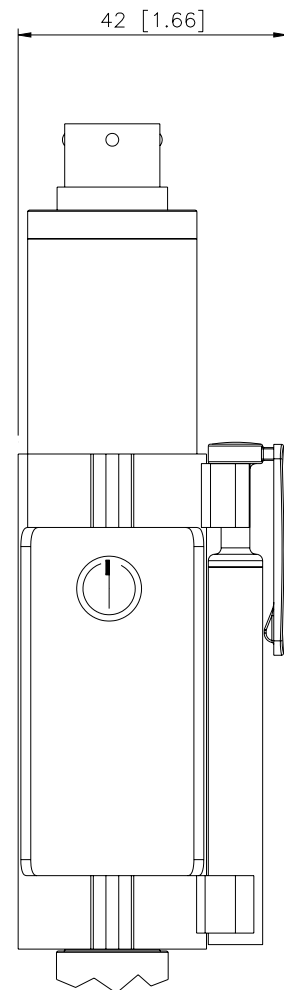
**Recommendation:** the error level set by the customer (e.g. maximum pressure value) has to be inside the nominal range.

## LOAD DIAGRAM



The diagram shows the optimum ratio between load and power supply for transmitters with 4...20mA output. For correct function, use a combination of load resistance and voltage that falls within the two lines in the graph above.

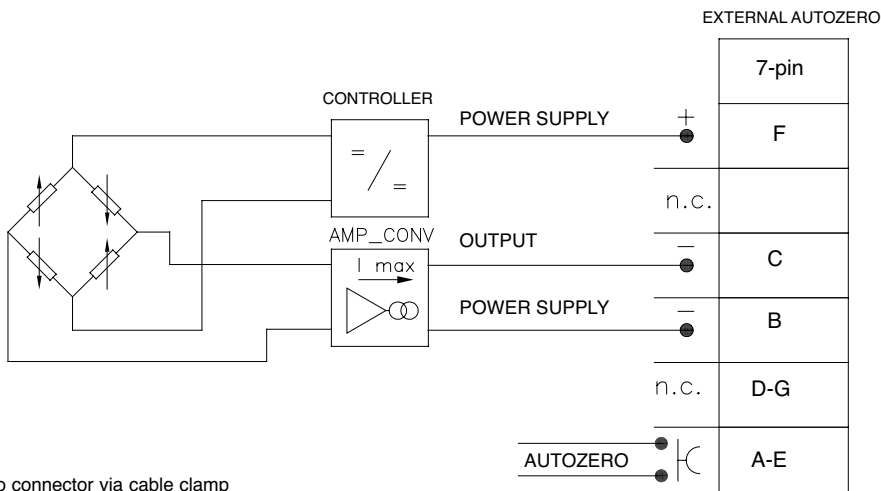
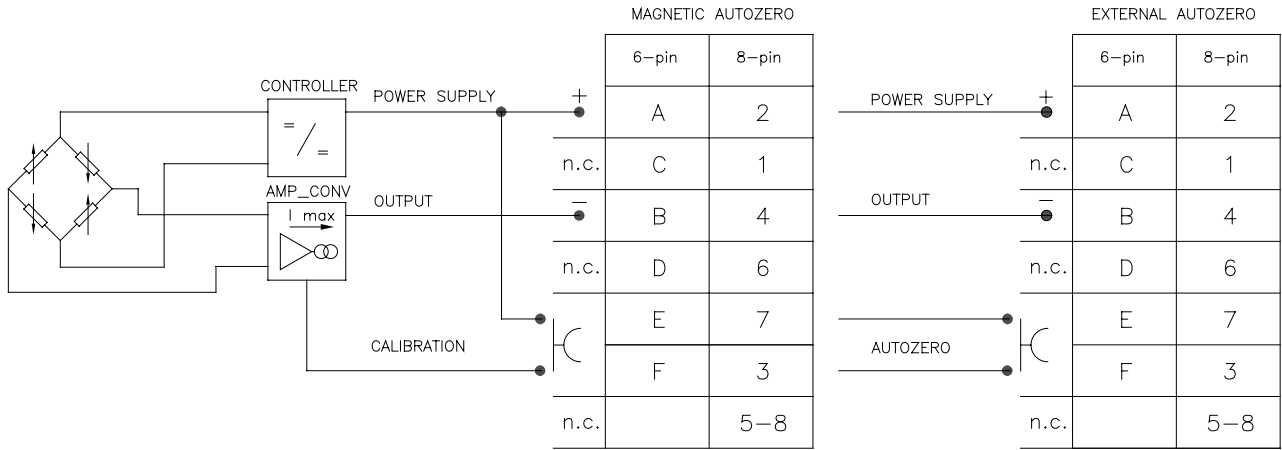
## AUTOZERO FUNCTION



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

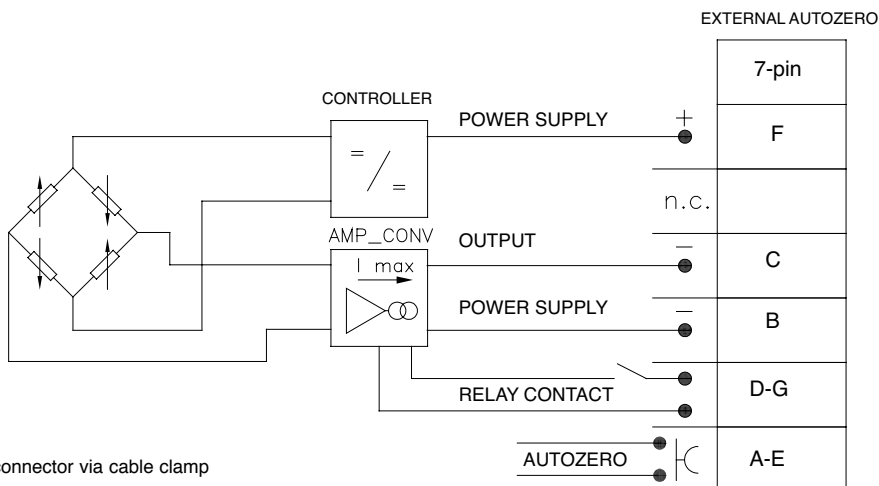
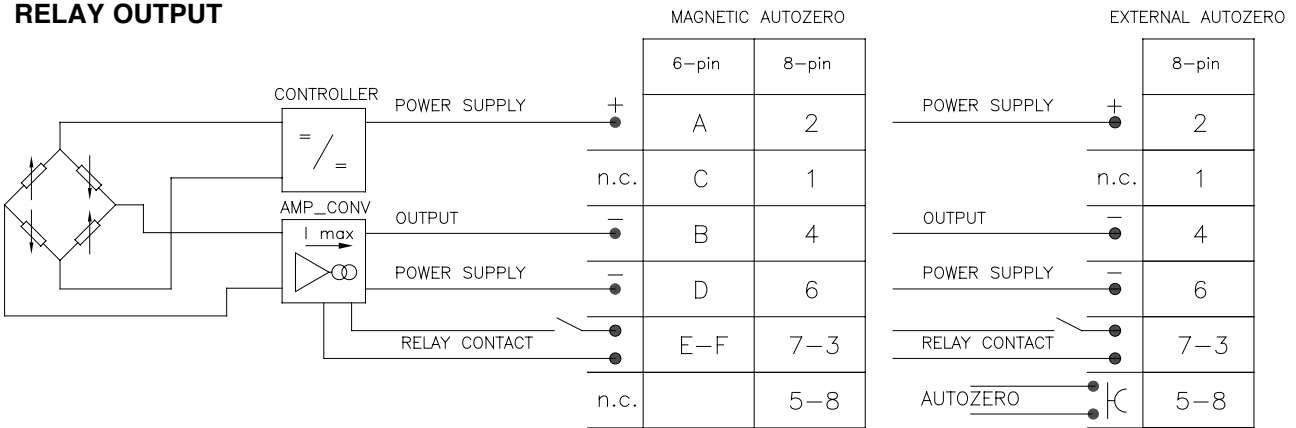
# ELECTRICAL CONNECTIONS

## CURRENT OUTPUT



The cable shield is tied to connector via cable clamp

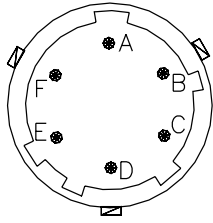
## RELAY OUTPUT



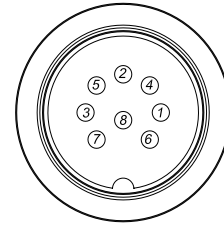
The cable shield is tied to connector via cable clamp

## ELECTRICAL CONNECTIONS

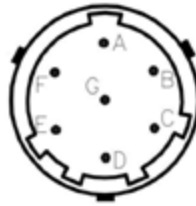
**6 pin connector VPT07RA10-6PT2  
(PT02A-10-6P)**



**8 pin connector (Binder)  
M16 DIN/EN45326 (09-0173-00-08)**



**7 pin connector (AMPHENOL) 62IN-5016-10-7P-4-M**



## ACCESSORIES

### Connectors

6-pin female connector (IP65 protection degree)  
7-pin female connector (IP65 protection degree)  
8-pin female connector (IP65 protection degree)

CON300  
CON345  
CON027

### 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

C08WLS  
C15WLS  
C25WLS  
C30WLS

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

C08WLS8  
C15WLS8  
C25WLS8  
C30WLS8

### 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

SF18  
SC12  
SC18  
KF12  
KF18  
CT12  
CT18  
PKIT 379  
PKIT 378

### Thermocouple for WE2 model

Type "J" (153mm - 6" rigid rod)

TTER 601

| Cable color code |        |
|------------------|--------|
| Conn.            | Wire   |
| A-2              | Red    |
| B-4              | Black  |
| C-1              | White  |
| D-6              | Green  |
| E-7              | Blue   |
| F-3              | Orange |
| 5                | Grey   |
| 8                | Pink   |

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