

The ME 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 400°C.

The constructive principle is based on the hydraulic transmission of the pressure.

The fluid-filled system assures the temperature stability.

The physical measure is transformed in a electrical measure by means the strain-gauge technology.

MAIN FEATURES

- Pressure ranges from:
0-35 to 0-2000 bar / 0-500 to 0-30000 psi
- Accuracy: $\pm 0.25\% \text{ FSO (H)}$; $\pm 0.5\% \text{ FSO (M)}$
- Fluid-filled system for temperature stability
- Mercury filling volume:
ME0 (30mm³); ME1, ME2, ME3 (40mm³)
- 1/2-20UNF, M18x1.5 standard threads; other types available on request
- Autozero function on board / external option
- Drift Autocompensation function (SP version)
- Standard diaphragm is 15-5 PH stainless steel with GTP+ coating
- 17-7 PH corrugated diaphragm with GTP+ coating for ranges below 100 bar-1500 psi

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 MSP 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).

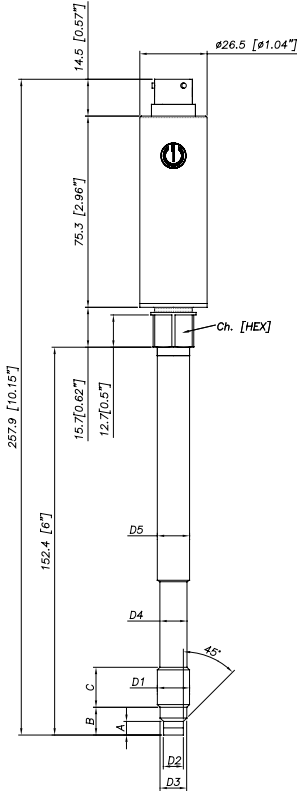
TECHNICAL SPECIFICATIONS

| | |
|--|---|
| Accuracy (1) | H $\pm 0.25\% \text{ FSO (100...2000 bar)}$ M $\pm 0.5\% \text{ FSO (35...2000 bar)}$ |
| Resolution | Infinite |
| Measurement range | 0..35 to 0..2000bar 0..500 to 0..30000psi |
| Maximum overpressure (without degrading performances) | 2 x FS 1.5 x FS above 1000bar/15000psi |
| Measurement principle | Extensimetric |
| Power supply | 10...30Vdc |
| Maximum current absorption | 32mA |
| Insulation resistance (at 50Vdc) | >1000 MOhm |
| Output signal Full Scale (FSO) | 20mA |
| Zero balance (tolerance $\pm 0.25\% \text{ FSO}$) | 4mA |
| Zero signals adjustment (tolerance $\pm 0.25\% \text{ FSO}$) | "Autozero" function |
| Span adjustment within $\pm 5\% \text{ FSO}$ | See Manual |
| Maximum allowed load | See diagram |
| Response time (10...90% FSO) | ~ 1ms |
| Output noise (RMS 10-400Hz) | <math>< 0.025\% \text{ FSO}</math> |
| Calibration signal | 80% FSO |
| 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 | <math>< 0.02\% \text{ FSO}/\text{C}</math> |
| Diaphragm maximum temperature | 400°C / 750°F |
| Zero drift due to change in process temperature (zero) | <math>< 0.02 \text{ bar}/\text{C}</math> |
| Zero drift temperature for Autocompensated version (SP) within the temperature range 20°C-400°C inclusive the drift temperature of the housing | <math>< 0.003 \text{ bar}/\text{C}</math> $100 \leq p < 500 \text{ bar}</math>$0.0014 \text{ \%FS}/\text{C}$ p \geq 500 \text{ bar}</math>$ |
| Standard material in contact with process medium | Diaphragm: • 15-5 PH with GTP+ coating • 17-7 PH corrugated diaphragm with GTP+ coating for ranges <math>< 100 \text{ bar (1500psi)}</math> Stem: • 17-4 PH |
| Thermocouple (model ME2) | 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.

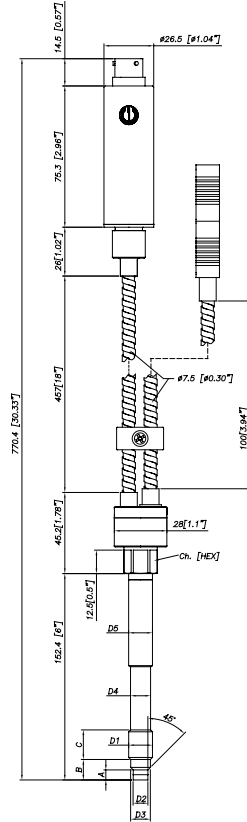
MECHANICAL DIMENSIONS

ME0

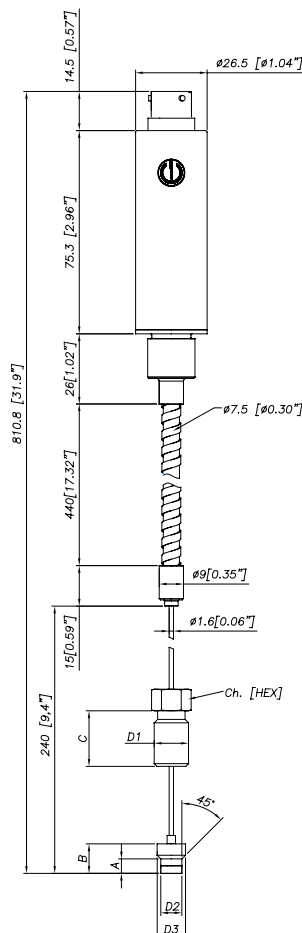


| | |
|-------|---------------------------------|
| D1 | 1/2 - 20UNF |
| D2 | ø7.8 -0.05 [ø0.31" -0.002] |
| D3 | ø10.5 -0.025 [ø0.41" -0.001] |
| D4 | ø10.67 [ø0.42"] |
| D5 | ø12.7 [ø0.5"] |
| A | 5.56 -0.26 [0.22" -0.01] |
| B | 11.2 [0.44"] |
| C | 15.74 [0.62"] |
| Ch | 16 |
| [Hex] | [5/8"] |

ME2



ME3



| 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] |

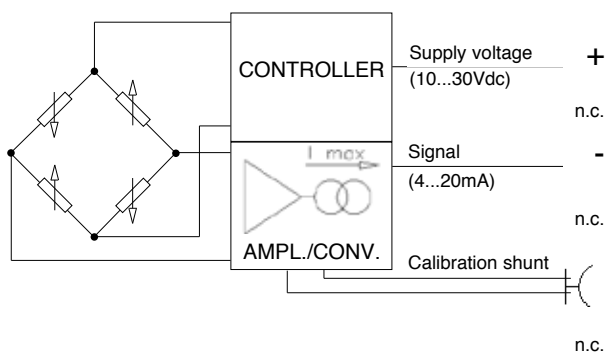
| | |
|-------|-------------------------------|
| D1 | M18x1.5 |
| D2 | ø10 -0.05 [ø0.394" -0.002] |
| D3 | ø16 -0.08 [ø0.63" -0.003] |
| D4 | ø16 -0.4 [ø0.63" -0.016] |
| D5 | ø18 [ø0.71"] |
| A | 6 -0.26 [0.24" -0.01] |
| B | 14.8 -0.4 [0.58" -0.016] |
| C | 19 [0.75"] |
| Ch | 19 |
| [Hex] | [3/4"] |

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

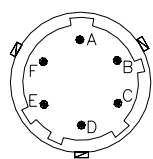
WARNING : For installation use a maximum tightening torque of 56 Nm (500 in-lb)

ELECTRICAL CONNECTIONS

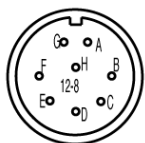
CURRENT OUTPUT (4...20mA, two wires)



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



8 pin connector
PC02E-12-8P Bendix



MAGNETIC AUTOZERO

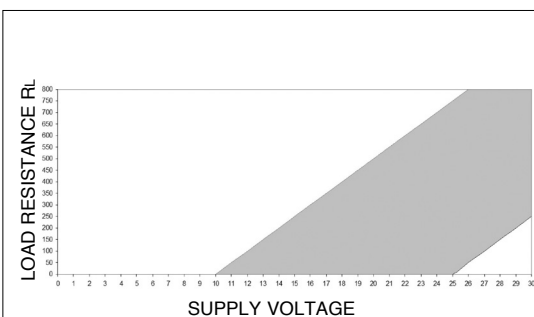
| 6-pin | 8-pin |
|-------|-------|
| A | B |
| C | A |
| B | D |
| D | C |
| E - F | E - F |
| | G - H |

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 |

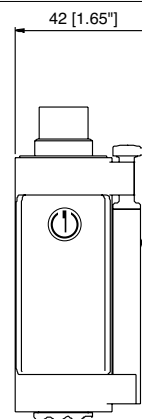
LOAD DIAGRAM



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 (IP65 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

Fixing pen clip

Autozero pen

Thermocouple for ME2 model

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

CON300
CON307

C08WLS
C15WLS
C25WLS
C30WLS
E08WLS
E15WLS
E25WLS
E30WLS
consult factory

SF18
SC12
SC18
KF12
KF18
CT12
CT18
PKIT309
PKIT312

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. |

ORDER CODE

M - - - - - - - - - - - - - - - - 000

| | |
|----------------------|-----------|
| Autocompensation (*) | SP |
| Standard | - |

(*) available for ranges > to 100bar
 (*) not available for version ME3

| | |
|----------------------|----------|
| OUTPUT SIGNAL | |
| 4...20mA | E |

| | |
|-----------------------|----------|
| CONFIGURATION | |
| Rigid stem | 0 |
| Rigid stem + flexible | 1 |
| With thermocouple | 2 |
| Exposed capillary | 3 |

| | |
|------------------|----------|
| CONNECTOR | |
| Standard | |
| 6 pin | 6 |
| 8 pin | 8 |

| | |
|---|----------|
| ACCURACY CLASS | |
| 0.25% FSO (ranges ≥ 100 bar/1500 psi) | H |
| 0.5% 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 |
| 1400 | B14C | 20000 | P20M |
| 2000 | B02M | 30000 | P30M |

000= Standard version
 Special or customized versions available on request

| | |
|----------|-------------------|
| E | External autozero |
| - | Magnetic autozero |

| FLEXIBLE LENGTH (mm / inches) | | |
|----------------------------------|--------|-----|
| Standard (ME0) | | |
| 0 | none | |
| Standard (ME1, ME2) | | |
| D | 457mm | 18" |
| E | 610mm | 24" |
| F | 760mm | 30" |
| Standard (ME3) | | |
| L | 711mm | 28" |
| Available on request | | |
| A | 76mm | 3" |
| B | 152mm | 6" |
| C | 300mm | 12" |
| G | 914mm | 36" |
| H | 1067mm | 42" |
| I | 1220mm | 48" |
| J | 1372mm | 54" |
| K | 1520mm | 60" |

| RIGID STEM LENGTH (mm / inches) | | |
|------------------------------------|-------|-------|
| Standard (ME0, ME1, ME2) | | |
| 4 | 153mm | 6" |
| 5 | 318mm | 12.5" |
| Standard (ME3) | | |
| 0 | none | |
| Available on request | | |
| 1 | 38mm | 1.5" |
| 2 | 50mm | 2" |
| 3 | 76mm | 3" |
| 6 | 350mm | 14" |
| 7 | 400mm | 16" |
| 8 | 456mm | 18" |

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

Examples

ME2-6-M-B07C-1-4-D-000

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") flexible capillary.

MSPE0-6-M-P03M-1-4-0-000

Melt pressure transmitter uncompensated version, rigid stem, 4...20mA output, 6-pin connector, 1/2-20UNF thread, 3000 psi full scale, 0,5% accuracy class, 153 mm (6") rigid stem.

Sensors are manufactured in compliance with:

- EMC compatibility directive
- Machinery directive

Product designed and available in compliance with Directive 2011/65/EU (RoHS II) only for large-scale stationary installation or industrial tools, or for B-to-B laboratory equipments for R&D purposes.

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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