

MELT PRESSURE TRANSMITTERS KE SERIES PERFORMANCE LEVEL 'c'

Output 4...20mA



The KE 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 538°C (1000°F).

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

The fluid-filled system assures the temperature stability Nak (Potassium/Sodium).

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

MAIN FEATURES

- Pressure ranges from:
 0-17 to 0-1000 bar / 0-250 to 0-15000 psi
- Accuracy: < ±0.25% FSO (H); < ±0.5% FSO (M)
- Hydraulic transmission system for pressure signal guarantees stability at working temperature (NaK).
 Liquid conforming to RoHS Directive.
 NaK is defined as a safe substance (GRAS)
- Quantity of NaK contained per model: KE0 series (30mm³) [0.00183 in³], KE1, KE2, KE3 (40mm³) [0.00244 in³]
- 1/2-20UNF, M18x1.5 standard threads; other types available on request
- · Autozero function on board / external option
- Inconel 718 diaphragm with GTP+ coating for temperatures up to 538°C (1000°F)
- 15-5 PH diaphragm with GTP+ coating for temperatures up to 400°C (750°F)
- Hastelloy C276 diaphragm for temperatures up to 300°C (570°F)
- 17-7 PH corrugated diaphragm with GTP+ coating for ranges below 100bar-1500psi up to 400°C (750°F)
- Stem material: 17-4 PH

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.

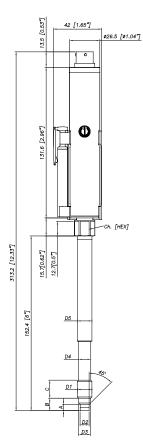
TECHNICAL SPECIFICATIONS

Accuracy (1)	H <±0.25% FSO (1001000 bar) M <±0.5% FSO (351000 bar)
Resolution	16 bit
Measurement range	017 to 01000bar 0250 to 015000psi
Maximum overpressure (without degrading performances)	2 x FS 1.5 x FS above 700bar/10000psi
Measurement principle	Extensimetric
Power supply	1330Vdc
Maximum current absorption	23mA (40mA with relay optional)
Output signal Full Scale (FSO)	20mA
Zero balance (tollerance ± 0.25% FSO)	4mA
Response time (1090% FSO)	8ms
Output noise (RMS 10-400Hz)	< 0.025% FSO
Calibration signal	80% FSO
Power supply polarity reverse 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 compesated range: Zero / Calibration / Sensibility	< 0.02% FSO/°C
Diaphragm maximum temperature	538°C / 1000°F
Zero drift due to change in process temperature (zero)	< 3.5 bar/100°C / < 28 psi/100°F
Thermocouple (model KE2)	STD : type "J" (isolated junction)
Protection degree (6-pole female connect)	IP65

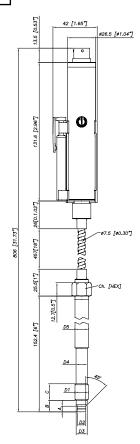
FSO = Full scale output: (1) BFSL method (Best Fit Straight Line): includes combined effects of Non-Linearity, Hysteresis and Repeatability.

MECHANICAL DIMENSIONS

KE0



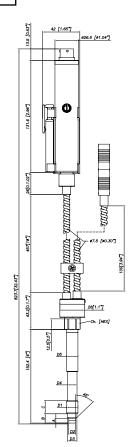
KE1



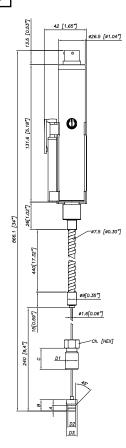
KE2

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"]
Α	5.56 -0.26 [0.22" -0.01]
В	11.2 [0.44"]
С	15.74 [0.62"]
Ch [Hex]	16 [5/8"]

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"]
Α	6 -0.26 [0.24" -0.01]
В	14.8 -0.4 [0.58" -0.016]
С	19 [0.75"]
Ch [Hex]	19 [3/4"]



KE3



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: 1ARated voltage: 24Vdc ± 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:

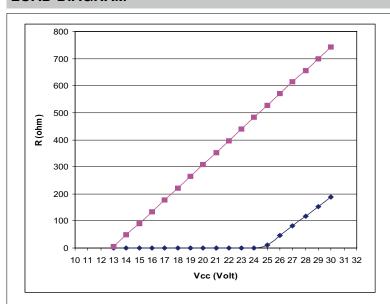
· most common failures on primary sensors: the signal goes to>21mA

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

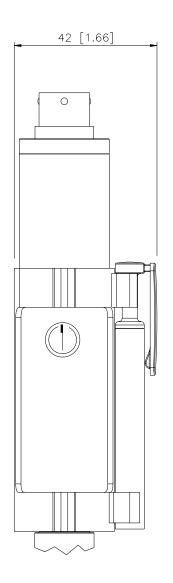
LOAD DIAGRAM



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.

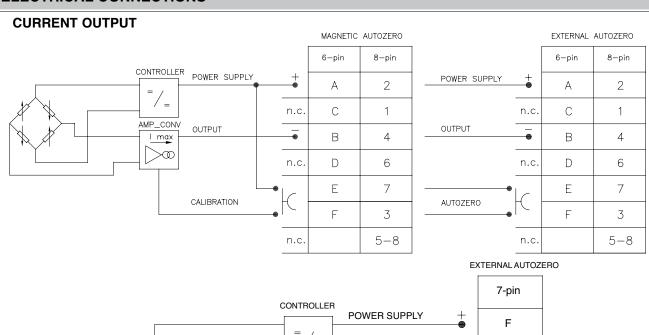
AUTOZERO FUNCTION

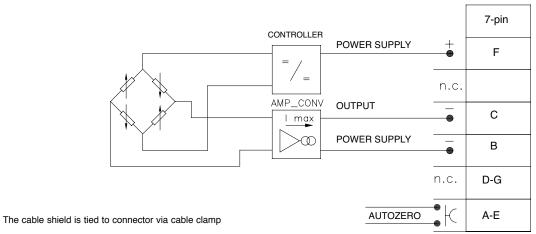


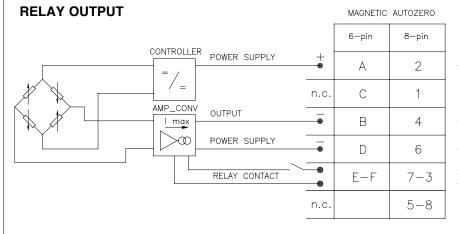
The Autozero function is activated through a magnetic contact (external magnet supplied with the sensor).

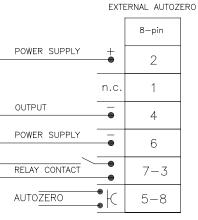
See the manual for a complete Autozero function explanation.

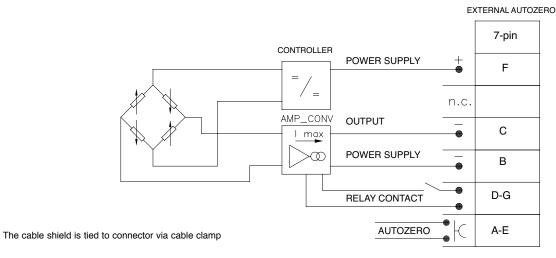
ELECTRICAL CONNECTIONS





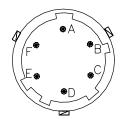




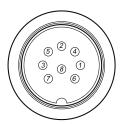


ELECTRICAL CONNECTIONS

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

Conne	ectors
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6-pin female connector (IP65 protection degree)	CON300
7-pin female connector (IP65 protection degree)	CON345
8-pin female connector (IP65 protection degree)	CON027

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
8-pin connector with 8m (25ft) cable	C08WLS8
8-pin connector with 15m (50ft) cable	C15WLS8
8-pin connector with 25m (75ft) cable	C25WLS8
8-pin connector with 30m (100ft) cable	C30WLS8

Accessories

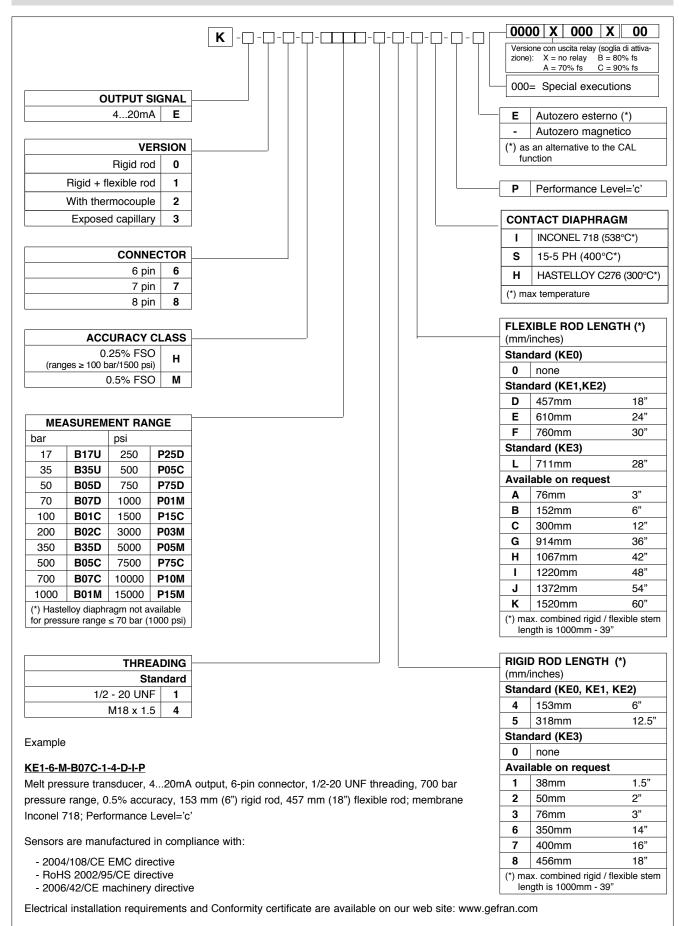
Mounting bracket	SF18
Dummy plug for 1/2-20UNF	SC12
Dummy plug for M18x1.5	SC18
Drill kit for 1/2-20UNF	KF12
Drill kit for M18x1.5	KF18
Cleaning kit for 1/2-20UNF	CT12
Cleaning kit for M18x1.5	CT18
Fixing pen clip	PKIT 379
Autozero pen	PKIT 378

Thermocouple for KE2 model

Type "J" (153mm - 6" rigid rod)	TTER 601
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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

ORDER CODE



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



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