

Pressure

transducers and transmitters



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GEFRAN

GEFRAN Industrial Pressure Transducers / Transmitters

The pressure transducer is an electronic device used to convert a physical variable (pressure) into an electrical signal (current or voltage) that can be acquired by electronic equipments and control and regulation systems.

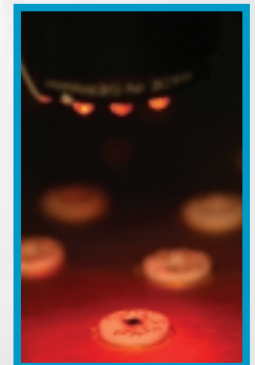
Talking about the existing measuring principles, Gefran is using one of the most popular and reliable, the so-called "Wheatstone Bridge".

By means of these sensors is possible to measure pressure of gas and fluids on all the applications required by the Industry, and Gefran gives a wide range of devices for pressure scales from 0...250 mbar to 0...5000 bar.

Pressure ranges

Model	Pressure	PMH	TK	TSA	TPSA	TPF	TPFA	TPH	TPHA	XSA	XPSA	TPS
Min. range	BAR	0...0,25	± 1	0...0,25	0...50	0...10	0...10	0...1000	0...1000	0...0,25	0...50	0...100
	PSI	0...5	± 15	0...5	0...750	0...150	0...150	0...15000	0...15000	0...5	0...750	0...1500
Max. range	BAR	0...60	0...500	0...60	0...1000	0...1000	0...1000	0...5000	0...5000	0...60	0...1000	0...1000
	PSI	0...1000	0...7500	0...1000	0...15000	0...15000	0...15000	0...70000	0...70000	0...1000	0...15000	0...15000

Defined the measuring principle, in our case the Wheatstone Bridge, there are different technologies to realize the sensing elements, and Gefran is one of the few Company in the world to have developed inside the know-how for three of these technologies, to obtain the total control of the manufacturing process to give quality, reliability and accuracy of the finished product.



Thanks to advanced equipments and sophisticated clean rooms on its "Polo Tecnologico" facility, Gefran manufactures the sensing elements with the following technologies:

- THICK FILM
- BONDED STRAIN GAUGE
- SILICON PIEZORESISTIVE



You can find detailed information on these technologies on our website www.gefran.com under the menu "TECHNOLOGIES"

XPSA
NEW



XSA
NEW

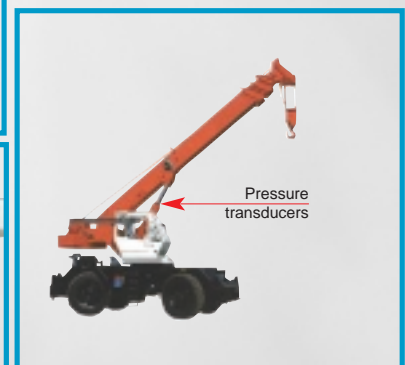
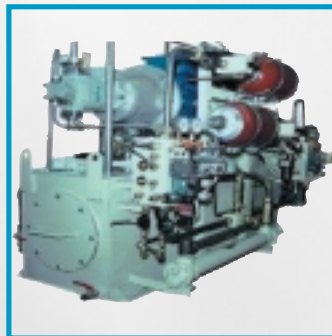
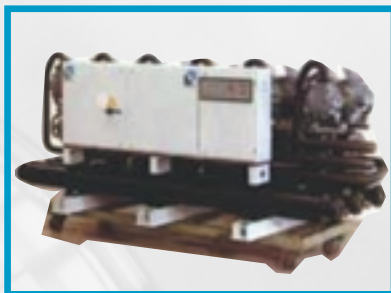


Available also with ATEX certification for use in Hazardous Area (Intrinsically Safe Version). ATEX 94/9/CE Directive is related to electrical and mechanical equipments and to the protective systems intended for use in potentially explosive atmospheres (inflammable gas, vapours and dust).

Typical applications





Due to high and resistance to extreme environmental conditions, the new Gefran's industrial sensors are suitable for all the applications where reliability and efficiency are fundamental.






- Plastic Machines: blowing machines, injection moulding, rubber sole production;
- Hydraulics Pneumatics: mechanical assembly, test benches and test lines, water cutting machines, valves, pumps
- Oleodynamics: rolling mills, gear box lubrication units, components test benches, cylinders, presses, aluminium extrusion, transfer machines
- Mobile Hydraulics: cranes, earth moving machines, utility vehicles
- Food & Beverage: homogenizers, packaging machines
- ATEX (Intrinsic Safe): natural gas distribution, pressure reduction stations, CNG refueling stations, chemical plants, gas compressors
- Various: snow guns



Pressure transducers and transmitters

Main technical characteristics

		NEW 	NEW 	NEW 
MODEL	PMH	XPSA	XSA	TK
MEASUREMENT RANGE	0...0,25 to 0...60 bar 0...5 to 0...1000 psi	0...50 to 0...1000bar 0...750 to 0...15000psi	0...0,25 to 0...60bar 0...5 to 0...1000psi	± 1bar to 0...500bar ± 15psi to 0...7500psi
ACCURACY	± 0,25% FSO BFSL	± 0,1% FSO BFSL typical	± 0,15% FSO BFSL typical	H ± 0,25% FSO M ± 0,5% FSO BFSL typical
OVERPRESSURE	10x...1,5x	3x	8x...1,5x	2x
PRESSURE CONTAINMENT	20x...2x	5x	10x...2x	4x
PRESSURE MEDIA	Stainless steel AISI 316L	Stainless steel 17-4PH	Stainless steel AISI 304 e AISI 316	Stainless steel 17-4PH AISI 430F
OUTPUT SIGNAL	100mV @ 1mA	4-20mA	4-20mA	4-20mA; 0-10V; 0-5V; 0,1-10,1V; 0,1-5,1V; 1-5V; 1-10V; 1-6V; Custom
OPERATING TEMPERATURE RANGE	-40...+125°C (-40...+257°F)	-20...+70°C (-4...+158°F)	-20...+70°C (-4...+158°F)	-40...+105°C (-40...+221°F)
COMPENSATED TEMPERATURE RANGE	-25...+85°C (-13...+185°F) optional	-10...+70°C (+14...+158°F)	-10...+70°C (+14...+158°F)	-10...+85°C (+14...+185°F)
TEMPERATURE EFFECTS OVER COMPENSATED RANGE	± 0,03% FSO/°C	± 0,01% FSO/°C typical	± 0,01% FSO/°C > 1bar ± 0,04% FSO/°C ≤ 1bar typical	± 0,012% FSO/°C typical
INGRESS PROTECTION (IEC 529) (With female connector correctly installed)		IP65/IP67	IP65/IP67	IP65/IP67
TYPICAL APPLICATIONS	Primary sensor with stainless steel isolating diaphragm and silicon technology. Low pressure ranges available, high accuracy, compact size. - OEM - PRESSURE TRANSDUCER / TRANSMITTER MANUFACTURERS - DATALOGGER MANUFACTURERS - PORTABLE INSTRUMENTS MANUFACTURERS	ATEX certified unit to be used in Hazardous Area (Intrinsically Safe) applications. High accuracy, fast response, compact size, ranges up to 0...1000 bar, vibration insensitivity. - NATURAL GAS DISTRIBUTION PLANTS - PRESSURE REDUCTION GAS STATIONS - GAS COMPRESSORS - CHEMICAL PLANTS	ATEX certified unit to be used in Hazardous Area (Intrinsically Safe) applications. High accuracy, fast response, compact size, low ranges up to 0...250 mbar, vibration insensitivity.. - NATURAL GAS DISTRIBUTION PLANTS - PRESSURE REDUCTION GAS STATIONS - GAS COMPRESSORS - CHEMICAL PLANTS	Low cost and high accuracy & reliability sensor with thick film Gefran technology. Wide range of current and voltage signal outputs, pressure connections and electrical connectors. Fast response, compact size, ranges from ± 1 bar to 0...500 bar, vibration insensitivity. - INDUSTRIAL AUTOMATION - COMPRESSORS - OIL GEAR BOXES - MOBILE HYDRAULICS - EARTH MOVING MACHINES - UTILITY VEHICLES - PUMPS - MATERIAL TESTING MACHINES - TEST BENCHES - CHILLER SYSTEMS - BLOWING MACHINES

				
TPSA	TSA	TPS	TPF	TPFA
0...50 to 0...1000bar 0...750 to 0...15000psi	0...0,25 to 0...60bar 0...5 to 0...1000psi	0...100 to 0...1000bar 0...1500 to 0...15000psi	0...10 to 0...1000bar 0...150 to 0...15000psi	0...10 to 0...1000bar 0...150 to 0...15000psi
± 0,1% FSO BFSL typical 3x	± 0,15% FSO BFSL typical 8x...1,5x	± 0,15% FSO BFSL typical 3x (p. max 2000bar)	± 0,3% FSO BFSL ± 0,6% FSO BFSL 2x (p. max 2000bar)	± 0,3% FSO BFSL ± 0,6% FSO BFSL 3x (p. max 2000bar)
5x	10x...2x	5x (p. max 2500bar)	3x (p. max 2000bar)	4x (p. max 2000bar)
Stainless steel 17-4PH	Stainless steel AISI 304 and AISI 316	Stainless steel 17-4PH	Stainless steel 17-4PH	Stainless steel 17-4PH
4-20mA; 0-10V; 0-5V; 0,1-10,1V; 0,1-5,1V; 1-5V; 1-10V; 1-6V; Custom	4-20mA; 0-10V; 0-5V; 0,1-10,1V; 0,1-5,1V; 1-5V; 1-10V; 1-6V; Custom	3mV/V	3mV/V 2mV/V 1,5mV/V	4-20mA; 0-10V; 0-5V; 0,1-10,1V; 0,1-5,1V; 1-5V; 1-10V; 1-6V; 1-11V
-40...+105°C (-40...+221°F)	-20...+85°C (-4...+185°F)	-40...+105°C (-40...+221°F)	-30...+120°C (-22...+248°F)	-30...+85°C (-22...+185°F)
-10...+85°C (+14...+185°F)	-10...+85°C (+14...+185°F)	-20...+85°C (-4...+185°F)	-20...+100°C (-4...+212°F)	0...+70°C (+32...+158°F)
± 0,008% FSO/°C typical	± 0,01% FSO/°C > 1bar ± 0,04% FSO/°C ≤ 1bar typical	± 0,01% FSO/°C typical	± 0,02%FSO/°C > 50bar ± 0,03%FSO/°C ≤ 50bar	± 0,02%FSO/°C
IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67
High accuracy (<0.1%FS) and reliability sensor. Wide range of current and voltage signal outputs, pressure connections and electrical connectors. Fast response (<1 msec), compact size, ranges up to 0...1000 bar, vibration insensitivity and high overpressure capability (3x FS).	Precision (<0.15%FS) silicon piezoresistive sensor. Wide range of current and voltage outputs, pressure connections and electrical connectors. Fast response (<1 msec), compact size, low pressure up to 0...250 mbar, vibration insensitivity, high overpressure capability.	High precision (<0.15%FSO) non- amplified strain gauge sensor. Wide range of pressure connections and electrical connectors, compact size, ranges up to 0...1000 bar, vibration insensitivity and high overpressure capability (3x FS).	Flush fitting non-amplified strain gauge sensor. Wide range of electrical connectors, compact size, ranges up to 0...1000 bar, vibration insensitivity.	Flush fitting amplified strain gauge sensor. Wide range of electrical connectors and current and voltage signal outputs, compact size, ranges up to 0...1000 bar, vibration insensitivity.
<ul style="list-style-type: none"> - INDUSTRIAL AUTOMATION - HYDRAULIC/OIL PRESSES - OIL GEAR BOXES - TEST BENCHES/TEST STANDS - INJECTION MOULDING MACHINES - MOBILE HYDRAULICS - MATERIAL TESTING MACHINES 	<ul style="list-style-type: none"> - INDUSTRIAL AUTOMATION - TEST BENCHES/TEST STANDS - BLOWING MACHINES - PNEUMATIC AUTOMTION - ENGINE TEST BEDS 	<ul style="list-style-type: none"> - INDUSTRIAL AUTOMATION - TEST BENCHES/TEST STANDS - MATERIALS TESTING MACHINES - INJECTION MOULDING MACHINES - OIL GEAR BOX 	<ul style="list-style-type: none"> - CHEMICAL INDUSTRY - FOOD & BEVERAGE INDUSTRY - HIGH VISCOSITY FLUID PRESSURE 	<ul style="list-style-type: none"> - CHEMICAL INDUSTRY - FOOD & BEVERAGE INDUSTRY - HIGH VISCOSITY FLUID PRESSURE

Pressure transducers and transmitters

Main technical characteristics

MODEL

MEASUREMENT RANGE

ACCURACY

OVERPRESSURE

PRESSURE

CONTAINMENT

PRESSURE MEDIA

OUTPUT SIGNAL

OPERATING TEMPERATURE RANGE

COMPENSATED TEMPERATURE RANGE

TEMPERATURE EFFECTS OVER COMPENSATED RANGE

INGRESS PROTECTION

(IEC 529)

(With female connector correctly installed)

TYPICAL APPLICATIONS



TPH

0...1500 to 0...5000bar
0...20000 to 0...70000psi

± 0,3% FSO
BFSL

2x (p. max 6000bar)

3x (p. max 6000bar)

Stainless steel
15-5PH

2mV/V

-30...+120°C
(-22...+248°F)

0...+80°C
(+32...+176°F)

± 0,02% FSO/°C

IP65/IP67

Very high pressure non-amplified strain gauge sensor.
Wide range of electrical connectors, compact size, ranges up to 0...5000 bar, vibration insensitivity.

- AUTOCLAVES
- WATER CUTTING MACHINES
- OIL COMPONENTS TEST BENCHES
- VERY HIGH PRESSURE SYSTEMS

TPHA

0...1500 to 0...5000bar
0...20000 to 0...70000psi

± 0,3% FSO
BFSL

2x (p. max 6000bar)

3x (p. max 6000bar)

Stainless steel
15-5PH

4-20mA; 0-10V; 0-5V;
0,1-10,1V; 0,1-5,1V;
1-5V; 1-10V; 1-6V;
1-11V

-30...+85°C
(-22...+185°F)

0...+70°C
(+32...+158°F)

± 0,02% FSO/°C

IP65/IP67

Very high pressure amplified strain gauge sensor.
Wide range of electrical connectors and current and voltage signal outputs, compact size, ranges up to 0...5000 bar, vibration insensitivity.

- AUTOCLAVES
- WATER CUTTING MACHINES
- OIL COMPONENTS TEST BENCHES
- VERY HIGH PRESSURE SYSTEMS

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