Pietro Fiorentini

North America

Measurement and pressure control portfolio

Pietro Fiorentini USA Inc.

606 Park Drive | Weirton, WV 26062, United States of America | +1 304 232 9115

fio.westvirginia@fiorentini.com

Pietro Fiorentini S.p.A.

Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511

sales@fiorentini.com

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Who we are

We are a global organization that specializes in designing and manufacturing technologically advanced solutions for natural gas treatment, transmission and distribution systems.

We are the ideal partner for operators in the Oil & Gas sector, with a business solutions that span the whole natural gas chain.

We are constantly evolving to meet our customers' highest expectations in terms of quality and reliability.

Our aim is to be a step ahead of the competition, with customized technologies and an after-sale service program undertaken with the highest level of professionalism.

Pietro Fiorentini advantages

- Localized technical support
- Experience since 1940
- Operating in over 100 countries

Pietro Fiorentini Group

Pietro Fiorentini is now one of the largest industrial companies in the North East of Italy, with its main headquarters at Arcugnano, near Vicenza. The Group has about thirty production sites and commercial offices both in Italy and abroad, employing around 2,000 people worldwide.

More than **2,000 collaborators** around the world

14 production facilities: **8** in Italy and **7** abroad

Offices in **Europe**, **America**, **Africa** and **Asia**

Services **to over 100** countries

North America plant

Pietro Fiorentini USA is the North American operation and production facility of Pietro Fiorentini Group.

Strategically based in Weirton (WV) the manufacturing area is covering 30,000 sqf on a 32 acres property suitable for further expansion. The new plant, build from scratches to incorporate the 20 years' experience of lean manufacturing of the Group, operates since 2019. While promoting diversity, gender equality and supporting the local community, Pietro Fiorentini USA is considered among the top Pietro Fiorentini Group's subsidiaries operating worldwide.

Meters applications and H_2 compatibility

Segment	Model	H_2 Compatibility		Main applications	Made in USA
		≤ 20%	100%		
Industrial metering	Fiosonic	✓	✓		
Residential metering	SSM-iCON 250	✓	✓		*

Table 2 Meters compatibility and application

✓ Already available ✓ Upon request ✓ Specific model already available

Slam-shut valves applications and H_2 compatibility

Segment	Model	H_2 Compatibility		Main applications	Made in USA
		≤ 20%	100%		
Transmission HP	HBC 975	✓	✓		
Transmission HP	SBC 782	✓	✓		
Distribution MP	SCN	✓	✓		

Table 1 Slam-shut valves compatibility and application

✓ Already available ✓ Upon request ✓ Specific model already available

Pressure regulators applications and H_2 compatibility

Segment	Model	H_2 Compatibility		Main applications	Made in USA
		≤ 20%	100%		
Transmission HP	Aperflux 101	✓	✓		
Transmission HP	Aperflux 851	✓	✓		
Transmission HP	FT 518	✓	✓		*
Transmission HP	Norflux	✓	✓		
Transmission HP	Reflux 819	✓	✓		
Transmission HP	Reflux 819/FO	✓	✓		
Transmission HP	Staflux 187	✓	✓		
Transmission HP	Staflux Mini	✓	✓		
Distribution MP	Cirval	✓	✓		*
Distribution MP	Dival 500	✓	✓		
Distribution MP	Dival 600	✓	✓		
Distribution MP	Norval	✓	✓		
Distribution MP	Reval 182	✓	✓		
Distribution LP	FE 25/50	✓	✓		
Distribution LP	FE 75/100	✓	✓		
Distribution LP	Governors	✓	✓		
Distribution LP	PF 400	✓	✓		

NOTE: all optionals available with each pressure regulator (i.e. monitors, slam shut valves, silencers) have the same compatibility degree of the device they are equipped to.
(*) planned. Currently manufactured in Italy until production line can be moved to United States.

Table 3 Pressure regulators compatibility and application

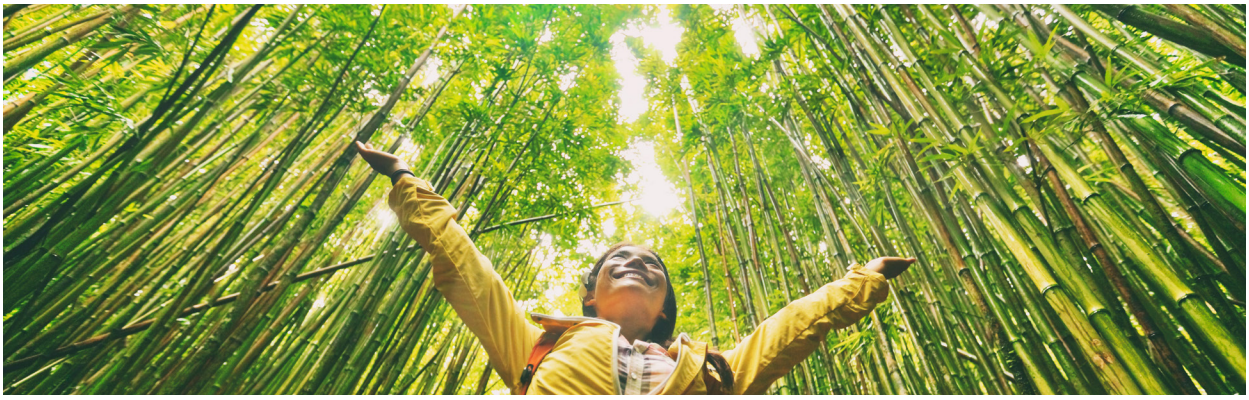
✓ Already available

✓ Upon request

✓ Specific model already available

Sustainability

Here at Pietro Fiorentini, we believe in a world capable of improvement through technology and solutions that can shape a more sustainable future. That is why respect for people, society and the environment form the cornerstones of our strategy.

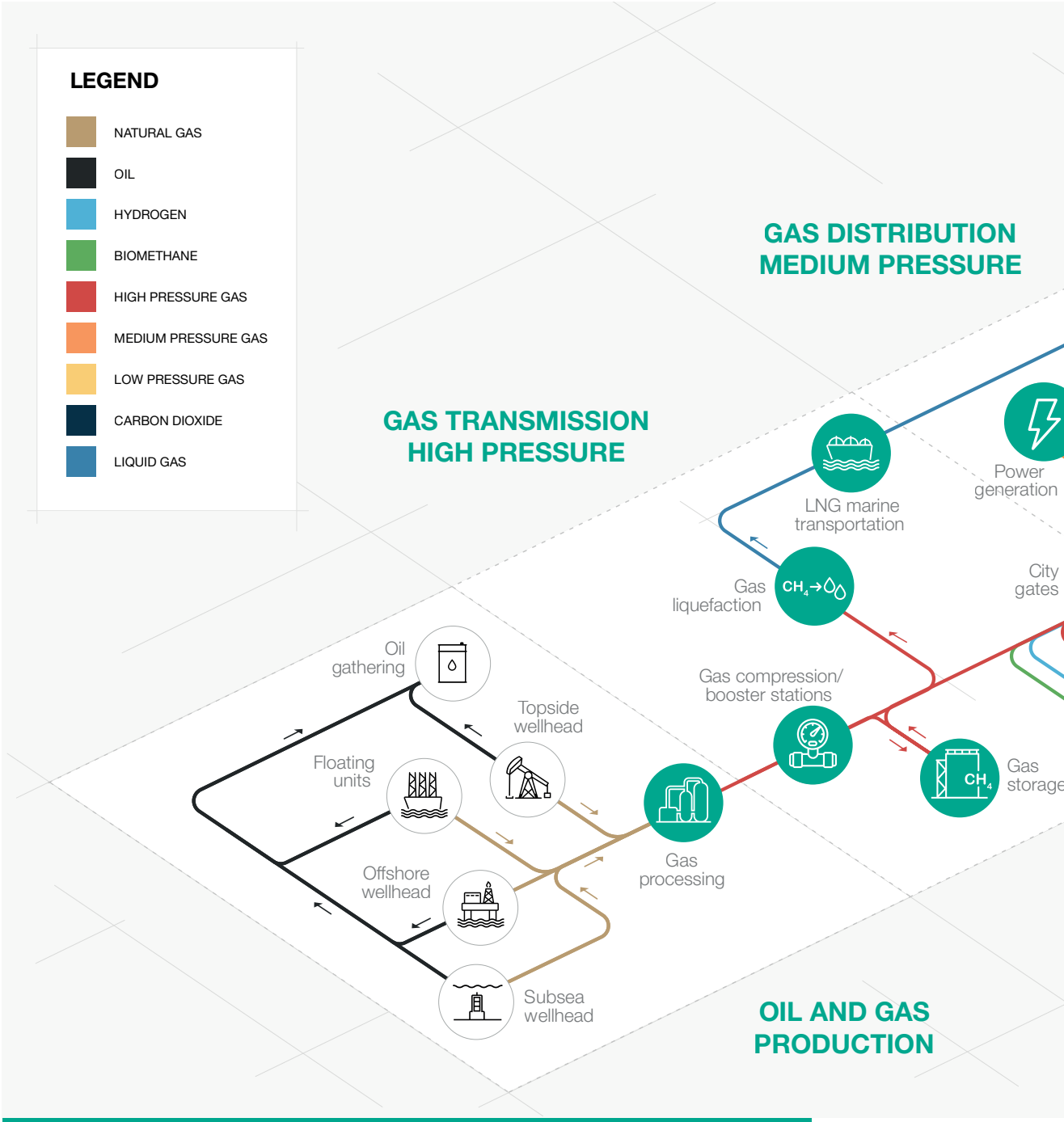


Our commitment to the world of tomorrow

While in the past we limited ourselves to providing products, systems and services for the oil & gas sector, today we want to broaden our horizons and create technologies and solutions for a digital and sustainable world. We have a particular focus on renewable energy projects to help make the most of our planet's resources and create a future in which the younger generations can grow and prosper.

The time has come to understand how and why we operate now.

Area of Application



Green icon indicates the application where this product is suitable for

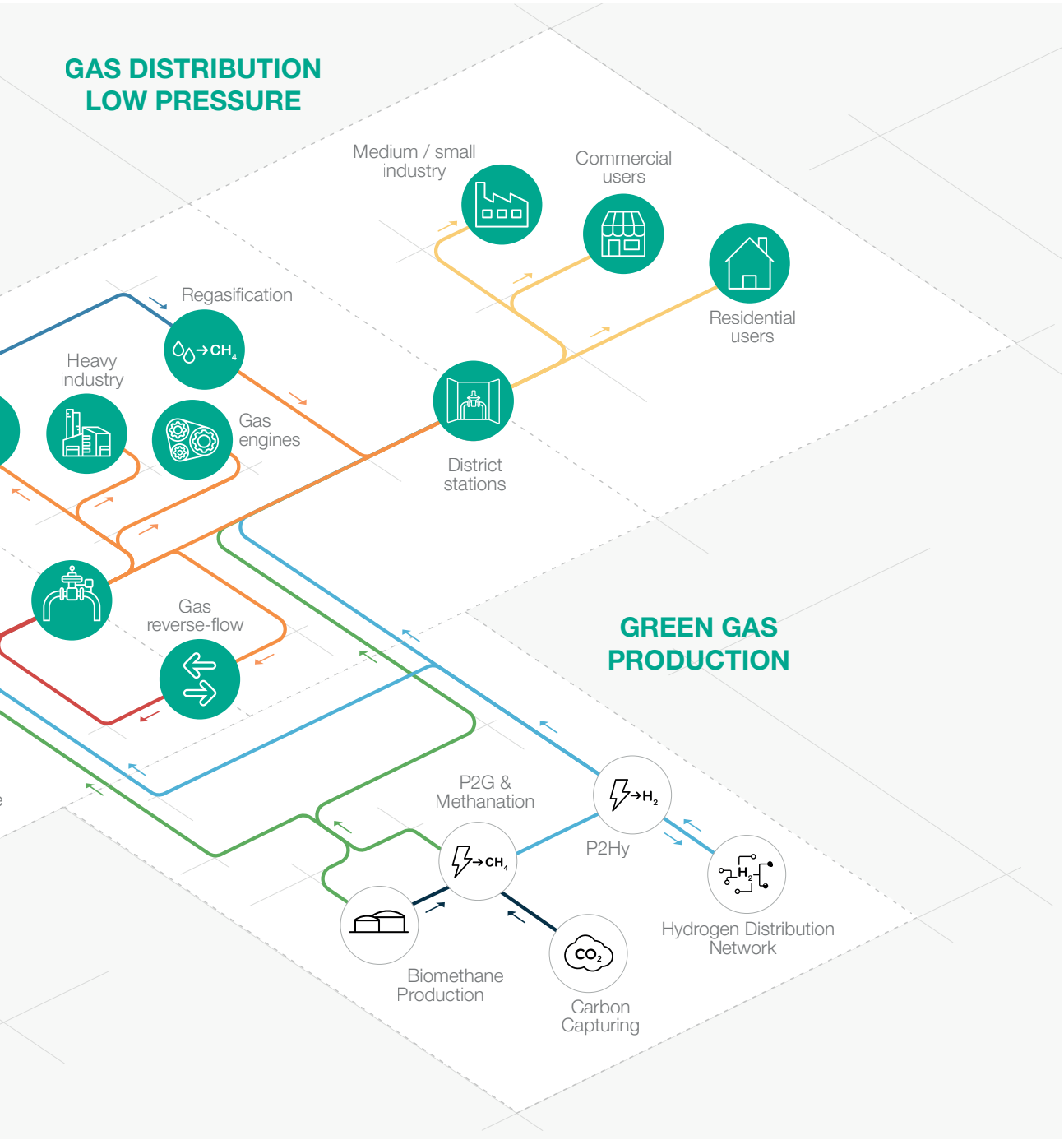


Figure 4 Area of application map

Pietro Fiorentini

FioSonic

The **FioSonic** is the natural evolution of the Pietro Fiorentini know-how and experience in the gas industry. With its multi path-chordal ultrasonic technology the **FioSonic** provides real time diagnostics high accuracy and redundancy for custody transfer gas flow measurement.The Fiosonic is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- Gas compression / booster stations
- Gas storage
- City gates
- Heavy industries
- Medium/small industries
- District stations
- Gas processing
- Regasification
- Gas reverse flow

Features	Values
Design pressure*	up to 15.3 MPa(a) up to 2,219 psi(a)
Ambient temperature*	• Ambient Temperature for Non custody Transfer: from -40 °C to +60 °C from -40 °F to +140 °F • Ambient Temperature Custody Transfer (MID and OIML certified): from -25 °C to +55 °C from -13 °F to +131 °F
Operating (gas) temperature*	from -30 °C to +80 °C from -22 °F to +176 °F
Accuracy	Up to 0.5% with factory calibration Up to 0.2% with high pressure flow calibration
Rangeability	Up to 1:160 for non-custody transfer Up to 1:125 for custody transfer acc. to OIML R-137/MID
Repeatability	0.1%
Ingress Protection	IP 66 / NEMA 4X
Applicable metrology standards	AGA-9; OIML R137-1&2 ; MID 2014/32/EU
Power supply and consumption	Main power: 14 - 0,710 mW max I/O option board power: 10.8 - 1,626 mW max
Hazardous area certification	ATEX II 1 G Ex ia IIC/IIB T4 Ga (intrinsically safe) IECEx Ex ia IIC/IIB T4 Ga (intrinsically safe) cQPSus Class 1 Div.1 Gr. ABCD T4-T1(intrinsically safe)
Accessories	Transducers Extraction Tool ≥ 8” (DN200)
Nominal dimensions DN	From DN80 | 3” to DN 750 | 30” for four-paths meter From DN50 | 2” to DN 750 | 30” for three-paths meter Above DN750 | 30” on request
Connections*	Class 150/300/600/900 RF / RTJ according to ASME B 16.5 or PN 16/25/40 according to EN 1092-1

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Forged steel ASTM A350 LF2 Cl.1 Other material on request
Electronic enclosure	Epoxy painted low copper aluminum alloy Stainless Steel 316, on request
Transducers	Titanium ASTM B348 Ti GR.2
Sealing ring	FKM or other material according to process conditions
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **FioSonic** is designed to meet AGA report N.9, ISO 17089-1, OIML R137-1&2 requirements.

AGA9 ISO17089-1 ANSI B109.0 (draft)

The product is certified according to European Directives 2014/68/EU (PED) as well as 2014/32/EU (MID), OIML R137 -1&2, ATEX, IECEx, CSA, UL (cQPSus).

OIML R137-1&2 PED-CE MID IECEx cQPSus ATEX

FioSonic competitive advantages

- Titanium transducers for long durability
- Low voltage sensors
- No moving parts
- High rangeability
- Bi-directional Flow measurements
- BCW processing for reduction of noise interferences
- Easy maintenance
- 30% Hydrogen blending compatible. Higher blending available on request
- Metallic wetted parts

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Pietro Fiorentini

SSM-iCON 250

The **SSM-iCON 250 smart meter** by Pietro Fiorentini incorporates the latest ultrasonic measurement technology to the flexibility of the interchangeable communication module. Equipped with the state of the art monitoring sensors it can stop the gas flow for temperature (fire), pressure or seismic events as well as from remote, to enhance customers and network safety. Suitable for use with natural gas, biomethane and and hydrogen blends (up to 20%), this device is used for residential applications on low pressure gas distribution networks.

Residential users

Features	Values
Capacity	7 m^3/h at 0.125 kPa differential pressure 250 cfh at 1/2"w.c. differential pressure
Measurement Range (Qmin - Qmax)	0.007 to 7.1 m^3/h 0.25 to 250 cfh
Minimum Flow rate (Qstart)	0.007 m^3/h 0.25 cfh
Maximum Operating Pressure*	up to 34.5 kPa up to 5 psig
Ambient temperature*	from -35°C to 55°C from -30°F to 130°F
Gas temperature range*	from -35°C to 55°C from -30°F to 130°F
Accuracy	Class 1 (according to ANSI B109.0)
Ingress protection	Compliant to IP67 and NEMA 4X
Power supplies and operating lifetime	Lithium batteries 20 years for metrological battery (non-replaceable) Up to 20 years for communication battery (replaceable)
Remote communication interface	Both NB-IoT and Cat-M1 in the same module
Hazardous area certification	Class 1 Division 1 Group D as per ANSI/ISA 121201
Gas volume compensation	Temperature compensated (TC) and non temperature compensated (NTC) options available
Nominal dimensions	Connection distance – 6" (152,4mm)
Connections	10LT, 20LT, Sprague (other on request)

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Die cast aluminum ANSI/AA 384.0 with epoxy finishing for the meter case
Electronic enclosure	Plastic polycarbonate for the electronics case suitable for outdoor installation

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The SSM iCON 250 is designed to meet ANSI B109.1, AGA Ultrasonic Gas Meters Engineering Technical Note as well as key features compliance of OILM R137, ANSI B109.0 (draft), PS-G-06 and EN14236.

ANSI B109.1 | OIML R137 | ANSI B109.0 (draft) | EN 14236* | AGA Engineering Technical Note | PS-G-06

*Limited to “5.7 Contaminants in the gas stream”.

The product is certified cULus Class1 Div1 for Hazardous area installation.

cULus
Class1 Div1

SSM iCON 250 competitive advantages

- Emergency gas shut off for fire event
- Emergency gas shut off for earthquake
- NB-IoT and Cat-M1 multi standard IoT modem
- Advanced diagnostic with pressure and temperature monitoring sensors
- Simple HMI with LCD display. Single button operation
- 20 years metrological battery
- 20 years communication battery life with NB-IoT module (both 4G and 5G networks)
- Open protocol and interchangeable communication module
- Suitable for outdoor installations
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

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Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

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Pietro Fiorentini

HBC 975

The **HBC 975** is a safety device, also called slam shut valve, suitable to quickly interrupt the gas flow when the pressure reaches a calibration set value. This device is mainly used in high-pressure transmission systems and in medium pressure gas distribution networks.

- Gas compression / booster stations
- Gas liquefaction
- Gas storage
- City gates
- Gas reverse-flow
- LNG marine transportation
- Regasification
- Power generation
- Heavy industry
- District stations

Features	Values
Design pressure*	up to 10.2 MPa up to 1479.4 psi
Ambient temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature range*	from -20 °C to +60 °C from -4 °F to +140 °F
Available Accessories	Limit switch, remote tripping
Maximum inlet pressure	10 MPa 1450 psi
Accuracy class AG	up to 2.5 for OPSO (depending on working conditions) up to 2.5 for UPSO (depending on working conditions)
Over pressure setting range (OPSO)	from 0.02 MPa to 9 MPa from 2.9 psi to 1305 psi
Under pressure setting range (UPSO)	from 0.02 MPa to 9 MPa from 2.9 psi to 1305 psi
Nominal dimensions DN	DN 100 | 4”; DN 150 | 6”; DN 200 | 8”; DN 250 | 10”; DN 300 | 12”
Connections*	ANSI 150, 300 and 600 according to ASME B16.5 and PN 16 according EN 1092
End to end dimensions	according to EN 334, EN 14382

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment’s full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A 352 LCC for classes ANSI 300 and 600; Cast steel ASTM A 216 WCB for classes ANSI 150 and PN 16
Stem	AISI 416 stainless steel
Plug	ASTM A 350 LF2 Nikel coated
Valve seat	Carbon steel + vulcanized rubber
Sealing ring	Nitrile rubber
Compression fittings	Zinc-plated carbon steel according to DIN 2353; Stainless steel on request
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **HBC 975** slam shut valve is designed according to the European standard EN 14382.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 14382

PED-CE

HBC 975 competitive advantages

- Over Pressure Shut-Off
- Under Pressure Shut-Off
- Internal by-pass
- Push botton for tripping test
- Top Entry
- Compact dimensions
- Easy maintenance
- Remote tripping option
- Limit switch option
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

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SBC 782

The **SBC 782** is a safety device, also called slam shut valve, suitable to quickly interrupt the gas flow when the pressure reaches a calibration set value. This device is mainly used in high-pressure transmission systems and in medium pressure gas distribution networks.

- Gas compression / booster stations
- Gas liquefaction
- Gas storage
- City gates
- Gas reverse-flow
- LNG marine transportation
- Regasification
- Power generation
- Heavy industry
- District stations
- Medium/small industry
- Commercial users

Features	Values
Design pressure*	up to 10.2 MPa up to 1,479 psig
Ambient temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature range*	from -20 °C to +60 °C from -4 °F to +140 °F
Available Accessories	Limit switch, remote tripping
Accuracy class AG	up to 2.5 for OPSO (depending on working conditions) up to 2.5 for UPSO (depending on working conditions)
Over pressure setting range (OPSO)	from 2 kPa to 9 MPa from 8”w.c. to 1,305 psig
Under pressure setting range (UPSO)	from 1 kPa to 9 MPa from 4”w.c. to 1,305 psig
Nominal dimensions DN	DN 25 | 1”; DN 50 | 2”; DN 80 | 3”; DN 100 | 4”; DN 150 | 6”; DN 200 | 8”; DN 250 | 10”
Connections*	Class 150/300/600 RF / RTJ according to ASME B 16.5 or PN 16/25/40 according to EN 1092-1
End to end dimensions	according to EN 334, EN 14382

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment’s full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and Approvals

Part	Material
Body	Cast steel ASTM A 352 LCC for class ANSI 600 and 300 Cast steel ASTM A 216 WCB for class ANSI 150 and PN 16
Stem	AISI 416 stainless steel
Plug	Stainless steel
Valve seat	Stainless steel
Sealing ring	Nitrile rubber
Compression fittings	According to DIN 2353 in zinc-plated carbon steel
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **SBC 782** slam shut valve is designed according to the European standard EN 14382.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 14382

PED-CE

SBC 782 competitive advantages

- Over Pressure Shut-Off
- Under Pressure Shut-Off
- Internal by-pass
- Push botton for tripping test
- Top Entry
- Compact dimensions
- Easy maintenance
- Remote tripping option
- Limit switch option
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

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SCN

The **SCN** is a safety device, also called slam shut valve, suitable to quickly interrupt the gas flow when the pressure reaches a calibration set value. This device is mainly used in medium and low pressure gas distribution networks.

- LNG marine transportation
- Gas reverse-flow
- Regasification
- Power generation
- Heavy industry
- Gas engines
- District stations
- Medium/small industry
- Commercial users

Features	Values
Design pressure*	up to 1.6 MPa up to 232 psig
Ambient temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature range*	from -20 °C to +60 °C from -4 °F to +140 °F
Available Accessories	Limit switch, remote tripping
Accuracy class AG	up to 2.5 for OPSO (depending on working conditions) up to 5 for UPSO (depending on working conditions)
Over pressure setting range (OPSO)	from 2.5 kPa to 0.5 MPa from 10”w.c. to 72 psig
Under pressure setting range (UPSO)	from 1 KPa to 0.3 MPa from 4”w.c. to 44 psig
Nominal dimensions DN	DN 25 | 1”; DN 40 | 1-1/2”; DN 50 | 2”; DN 65 | 2-1/2”; DN 80 | 3”; DN 100 | 4”; DN 150 | 6”; DN 200 | 8”;
Connections*	Class 150 RF according to ASME B16.5 and PN16 according to ISO 7005
End to end dimensions	EN 14382

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment’s full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and Approvals

Part	Material
Body	Cast steel ASTM A 216 WCB (all DN). Spheroidal ductile iron GS 400 – 18 ISO 1083 DN 150 (6”) included.
Stem guide	AISI 416
Plug	AISI 416 + TN028
Valve seat	AISI 420
Sealing ring	Nitrile rubber
Compression fittings	According to DIN 2353 in zinc-plated carbon steel. Stainless steel on request
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **SCN** slam shut valve is designed according to the European standard EN 14382.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 14382

PED-CE

SCN competitive advantages

- Over Pressure Shut-Off
- Under Pressure Shut-Off
- Internal by-pass
- Push botton for tripping test
- Top Entry
- Compact dimensions
- Easy maintenance
- Remote tripping option
- Limit switch option
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

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Aperflux 101

The **Aperflux 101** is one of the **pilot-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for high-pressure transmission systems and for medium pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Open.** The Aperflux 101 is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- Gas storage
- Heavy industries
- Gas compression / booster stations
- City gates
- Regasification

Features	Values
Design pressure* (PS[1] / DP[2])	up to 8.5 MPa up to 1,232 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.18 MPa to 8.5 MPa from 26 psig to 1,232 psig
Range of downstream pressure (Wd[1])	from 0.08 MPa to 7.4 MPa from 11,6 psig to 1,073 psig
Available accessories	none
Minimum operating differential pressure (Δp_{min}[1])	0.1 MPa - recommended > 0.2 MPa 14.5 psig - recommended > 29 psig
Accuracy class (AC[1])	up to 1 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 2.5 (depending on working conditions)
Nominal size (DN[1,2])	DN 50 | 2"; DN 80 | 3"; DN 100 | 4";
Connections	Class 300/600 RF / RTJ according to ANSI B 16.5

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A352 LCC for rating 300 and 600
Cover	Rolled or forged carbon steel A350 LF2
Seat	Stainless steel
Diaphragm	Vulcanized rubber
Sealing ring	Nitrile rubber
Compression fittings	According to DIN 2353 in zinc-plated carbon steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Aperflux 101** regulator is designed according to the European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Aperflux 101 competitive advantages

- Compact and simple design
- 1:500 High turn-down ratio
- Low noise
- Top Entry
- Easy maintenance
- Balanced type
- H_2 Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
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fio.westvirginia@fiorentini.com

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Aperflux 851

The **Aperflux 851** is one of the **pilot-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for high-pressure transmission systems and for medium pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Open.** The Aperflux 851 is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- City gates
- Gas storage
- Gas compression / booster stations
- Heavy industries
- Regasification

Features	Values
Design pressure* (PS[1] / DP[2])	up to 10.2 MPa up to 1,479 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.13 MPa to 8.5 MPa from 18.9 psig to 1,232 psig
Range of downstream pressure (Wd[1])	from 0.08 MPa to 7.4 MPa from 11.6 psig to 1073 psig
Available accessories	DB/851 Silencer, SB/82 Slam-shut, HB/97 Slam shut, PM/819 Monitor, opening indicator
Minimum operating differential pressure (Δp_{min}[1])	0.05 MPa - recommended 0.2 MPa 7.25 psig - recommended 29 psig
Accuracy class (AC[1])	up to 2.5 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 10 (depending on working conditions)
Nominal size (DN[1,2])	DN 25 | 1"; DN 50 | 2"; DN 80 | 3"; DN 100 | 4"; DN 150 | 6"; DN 200 | 8"; DN 250 | 10"
Connections	Class 150/300/600 RF / RTJ according to ASME B 16.5 or PN 16/25/40 according to ISO 7005

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A352 LCC for classes 300 and 600 ASTM A216 WCB for classes 150 and PN16
Cover	Rolled or forged carbon steel
Seat	Stainless steel for DN ≤3” Carbon Steel with seal edge in stainless steel for size ≥ 4”
Diaphragm	Vulcanized rubber
Sealing ring	Nitril rubber
Compression fittings	Zinc-plated carbon steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Aperflux 851** regulator is designed according to the European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Aperflux 851 competitive advantages

- Balanced type
- Operates with low differential pressure
- High accuracy
- High turn-down ratio
- Built-in pilot filter
- Top Entry
- Easy maintenance
- Low noise
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

FT 518

FT 518 is a **lever-operated** regulator controlled by a diaphragm and setting spring which controls the valve. It is mainly used for farm tap applications, high-pressure transmission systems and for medium pressure natural gas distribution networks with previously filtered non-corrosive gases. According to the European Standard, it is classified as **Fail Open.**

Medium / small industries

District stations

Features	Values
Design pressure* (PS[1] / DP[2])	up to 6.94 MPa up to 1000 psig
Ambient temperature* (TS[1])	from -40 °C to +60 °C from -40 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax} [1])	from 0.14 to 6.94 MPa from 20 to 1000 psig
Range of downstream pressure (Wd[1])	from 0.034 to 3.4 MPa from 5 to 500 psig
Available accessories	Token IRV, built-in strainer, incorporated monitor, incorporated slam-shut
Minimum operating differential pressure (Δp_{min} [1])	49 kPa 7 psig
Accuracy class (AC[1])	up to 20 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 20 (depending on working conditions)
Nominal size (DN[1,2])	DN 20 | 3/4"; DN 25 | 1"; DN 50 | 2"
Orifice	3/32"; 1/8"; 3/16"; 1/4"; 3/8"; 1/2"
Connections	threaded NPT, flanged or SW (available soon)

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Ductile iron GS400-18 equivalent to ASTM 536 60-40-18
Cover	Die cast aluminum
Valve	Nitrile rubber / High performance compound
Seat	Brass
Diaphragm	Nitrile rubber
Sealing ring	Nitrile rubber
Stem	Stainless steel
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **FT 518** regulator, is designed according to the ANSI B 109.4 standard where applicable.
The regulator reacts in opening (Fail Open) according to EN 334 classification.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

ANSI B109.4

FT 518 competitive advantages

- Compact and simple design
- Operates with high differential pressure
- Built-in filter
- Token IRV
- Top entry
- Built-in accessories
- Easy maintenance
- Biomethane compatible and available with specific versions for full Hydrogen or blending

Pietro Fiorentini

Norflux

The **Norflux** is a **direct-operated** regulator controlled by a diaphragm and setting spring which controls the valve. It is mainly used for high-pressure transmission systems and for medium pressure natural gas distribution networks with previously filtered non-corrosive gases. According to the European Standard, it is classified as **Fail Open.** The Norflux is **Hydrogen Ready** for NG-H2 blending.

City gates

District stations

Features	Values
Design pressure* (PS[1] / DP[2])	up to 10.0 MPa up to 1450 psig
Ambient temperature* (TS[1])	from -40 °C to +60 °C from -40 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.14 to 10 MPa from 20 to 1450 psig
Range of downstream pressure (Wd[1])	from 0.07 to 0.45 MPa from 10 to 65 psig
Available accessories	incorporated slam-shut
Minimum operating differential pressure (Δp_{min}[1])	48 kPa 7 psig
Accuracy class (AC[1])	up to 10 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 10 (depending on working conditions)
Nominal size (DN[1,2])	DN 50 | 2”
Orifice Sizes	2”
Connections	Class 300/600 RF / RTJ according to ASME B 16.5

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A352 LCC
Cover	ASTM A 350 LF2 steel
Seat	Stainless steel
Diaphragm	Vulcanized rubber
Sealing ring	Nitrile rubber
Compression fittings	Zinc-plated carbon steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Norflux** regulator is designed according to European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN 334

Norflux competitive advantages

- Compact and simple design
- Operates with high differential pressure
- Spring loaded regulator for high pressure
- Built-in accessories
- Easy maintenance
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Reflux 819

The **Reflux 819** is one of the **pilot-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for high-pressure transmission systems, power plants and for medium pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Close**. The Reflux 819 is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- Gas compression / booster stations
- Gas storage
- Gas engines
- City gates
- Heavy industries
- Regasification
- Power generation
- LNG marine
- Gas reverse-flow

Features	Values
Design pressure* (PS[1] / DP[2])	up to 10.2 MPa up to 1,479 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.05 MPa to 10.0 MPa from 7.25 psig to 1,450 psig
Range of downstream pressure (Wd[1])	from 0.03 MPa to 7.4 MPa from 4.35 psig to 1,073 psig
Available accessories	DB/819 Silencer, LDB/171 Silencer, PM/819 Monitor, SB/82 Slam shut, HB/97 Slam shut
Minimum operating differential pressure (Δp_{min}[1])	0.05 MPa | 7.25 psig
Accuracy class (AC[1])	up to 1
Lock-up pressure class (SG[1])	up to 2.5
Nominal size (DN[1,2])	DN 25 | 1"; DN 50 | 2"; DN 80 | 3"; DN 100 | 4"; DN 150 | 6"; DN 200 | 8"; DN 250 | 10"; DN 300 | 12"
Connections	Class 150, 300, 600 RF or RTJ according to ASME B16.5 and PN16 according to ISO 7005

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	ASTM A 352 LCC cast steel for classes ANSI 600 and 300; ASTM A 216 WCB cast steel for classes ANSI 150 and PN 16/40
Heads	ASTM A 350 LF2 steel
Stem	AISI 416 stainless steel
Plug	ASTM A 350 LF2 nickel-plated steel
Seat	Vulcanized Nitrile Rubber on metal support
Diaphragm	Rubberised Canvas (pre-formed by hot-pressing process)
O-rings	Nitrile Rubber
Compression fittings	Made of zync-plated steel according to DIN 2353; on request, stainless steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Reflux 819** regulator is designed according to the European standard EN 334.
The regulator reacts in closing (Fail Close) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Reflux 819 competitive advantages

- Compact and simple design
- High accuracy
- High turn-down ratio
- Fail Close plug and seat regulator
- Built-in pilot filter
- Top Entry
- Easy maintenance
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request
- Balanced type

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Reflux 819/FO

The **Reflux 819/FO** is one of the **pilot-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for high-pressure transmission systems, power plants and for medium pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Open**. The Reflux 819/FO is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- Gas compression / booster stations
- Gas storage
- City gates
- Heavy industries
- Regasification
- Power generation
- LNG marine
- Gas reverse-flow

Features	Values
Design pressure* (PS[1] / DP[2])	up to 10.2 MPa up to 1,479 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from 4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from 4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.3 MPa to 10.2 MPa from 43.5 psig to 1,479 psig
Range of downstream pressure (Wd[1])	from 0.1 MPa to 7.4 MPa from 14.5 psig to 1,073 psig
Available accessories	DB/819 Silencer, LDB/171 Silencer, PM/819 Monitor, SB/82 Slam shut, HB/97 Slam shut
Minimum operating differential pressure (Δp_{min}[1])	0.2 MPa | 29 psig
Accuracy class (AC[1])	up to 2.5
Lock-up pressure class (SG[1])	up to 5
Nominal size (DN[1,2])	DN 25 | 1"; DN 50 | 2"; DN 80 | 3"; DN 100 | 4"; DN 150 | 6"; DN 200 | 8"; DN 250 | 10"; DN 300 | 12"
Connections	Class 150, 300, 600 RF or RTJ according to ASME B16.5 and PN16

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and Approvals

Part	Material
Body	ASTM A 352 LCC cast steel for classes ANSI 600 and 300; ASTM A 216 WCB cast steel for classes ANSI 150 and PN 16/40
Heads	ASTM A 350 LF2 steel
Stem	AISI 416 stainless steel
Plug	ASTM A 350 LF2 nickel-plated steel
Seat	Vulcanized Nitrile Rubber on metal support
Membrane	Rubberised Canvas (pre-formed by hot-pressing process)
O-rings	Nitrile Rubber
Compression fittings	Made of zync-plated steel according to DIN 2353; on request, stainless steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Reflux 819/FO** regulator is designed according to the European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
DVGW certified as a truly Fail Open regulator.
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334 PED-CE DVGW

Reflux 819/FO competitive advantages

- Compact and simple design
- High accuracy
- High turn-down ratio
- True Fail Open plug and seat regulator
- Built-in pilot filter
- Top Entry
- Easy maintenance
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request
- Balanced type

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Staflux 187

Staflux 187 is one of the **direct-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for high-pressure transmission systems and for medium pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Open.** The Staflux 187 is **Hydrogen Ready** for NG-H2 blending.

- Gas liquefaction
- City gates
- Power generation
- Gas compression / booster stations
- Heavy industries
- LNG marine
- Gas storage
- Regasification
- Gas reverse-flow

Features	Values
Design pressure* (PS[1] / DP[2])	up to 25.0 MPa up to 3,625 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.2 MPa to 20 MPa from 29 psig to 2,900 psig
Range of downstream pressure (Wd[1])	from 0.1 MPa to 7.5 MPa from 14.5 psig to 1,088 psig
Available accessories	stand alone SBC 187 slam shut valve
Minimum operating differential pressure (Δp_{min}[1])	0.1 MPa 14.5 psig
Accuracy class (AC[1])	up to 5 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 10 (depending on working conditions)
Nominal size (DN[1,2])	DN 25 | 1”;
Connections	Class 1500 RF or RTJ according to ASME B16.5

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A352 LCC
Cover	ASTM A350 LF2 carbon steel
Stem	AISI 416 stainless steel
Seat	Stainless steel
Diaphragm	Vulcanized rubber
Sealing ring	Nitrile rubber
Compression fittings	Zinc-plated carbon steel

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Staflux 187** regulator is designed according to the European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Staflux 187 competitive advantages

- Compact and simple design
- Operates with high differential pressure
- Does not require gas pre-heating
- Top Entry
- Easy maintenance
- Balanced type
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Staflux Mini

The **Staflux Mini** is a **direct-operated pressure regulator** controlled by a diaphragm and contrasting regulated counter pressure action. Mainly used for CNG trailers, high-pressure transmission systems and for medium pressure natural gas distribution networks, it can be used with previously filtered non-corrosive gases. According to the European Standard EN 334, it is classified as **Fail Close**. The Staflux Mini is **Hydrogen Ready** for NG-H2 blending.

Heavy industries

Medium /small industries

Gas storage

Features	Values
Design pressure* (PS[1] / DP[2])	up to 25 MPa up to 3,625 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.5 MPa to 25 MPa from 72.5 psig to 3,625 psig
Range of downstream pressure (Wd[1])	from 0.4 MPa to 7.5 MPa from 58 psig to 1,088 psig
Available accessories	built-in filter
Minimum operating differential pressure (Δp_{min}[1])	0.1 MPa 14.5 psig
Accuracy class (AC[1])	up to 10 (depending on working conditions)
Lock-up pressure class (SG[1])	10 (depending on working conditions)
Nominal size (DN[1,2])	DN 25 | 1”
Connections	Class 1500 RF according to ANSI B16.5 or threaded NPT

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	ASTM A350 LF2 – Carbon Steel
Cover	ASTM A350 LF2 – Carbon Steel
Plug	Stainless steel AISI 416
Seat	Stainless steel AISI 416
Diaphragm	Rubber : NBR/PVC
Sealing ring	Nitril rubber
Stem	AISI 416

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Staflux Mini** regulator is designed according to the European standard EN 334.
The regulator reacts in closure (Fail Close) according to EN 334.
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

Staflux Mini competitive advantages

- Compact and simple design
- Operates with high differential pressure
- Does not require gas pre-heating
- Balanced type
- Top Entry
- Easy maintenance
- Built-in filter
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Cirval

The **Cirval** is a **lever-operated gas pressure regulator** controlled by a diaphragm and setting spring which controls the valve. Mainly used for medium and low pressure natural gas distribution networks, as well as commercial and industrial applications. It should to be used with previously filtered non-corrosive gases. According to the European Standard EN 334, it is classified as **Fail Open**. The Cirval is **Hydrogen Ready** for NG-H2 blending.

- Gas engines
- District stations
- Commercial users
- Regasification
- Medium / small industy

Features	Values
Design pressure* (PS[1] / DP[2])	up to 860 kPa up to 125 psig
Ambient temperature* (TS[1])	from -29 °C to +65 °C from -20 °F to +150 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 13.8 kPa to 517 kPa from 2 psig to 75 psig
Range of downstream pressure (Wd[1])	from 1.7 kPa to 82 kPa from 6.4“ w.c. to 12 psig
Available accessories	LA Slam shut, IMD (Independent Monitoring Device), IFM (Integral Full Monitor), built-in strainer
Minimum operating differential pressure (Δp_{min}[1])	12 kPa | 1.75 psig
Accuracy class (AC[1])	up to 10
Lock-up pressure class (SG[1])	up to 20
Nominal size (DN[1,2])	DN 32 | 1-1/4”; DN 40 | 1-1/2”; DN 50 | 2”
Orifice	Cirval 200: 3/4” Cirval 300: 1-1/2”
Connections	Cirval 200: 1-1/4”, 1-1/2” and 2” NPT according to ANSI B1.20.1, Cirval 300: 2” NPT according to ANSI B1.20.1, 2” S.125FF according to ANSI B16.5 and Sliding 2” S.150RF for AU version

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Ductile iron GS 400-18 ISO 1083
Cover	Die cast aluminum
Seat	Brass
Diaphragm	Nitrile rubber
Sealing ring	Nitrile

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Cirval** regulator is designed according to ANSI B109.4 and CSA 6.18 standards.
The regulator reacts in opening (Fail Open) according to EN 334.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

ANSI B109.4

CSA 6.18

Cirval competitive advantages

- Compact and simple design
- High accuracy
- Fail Open plug and seat regulator
- Balanced type
- Top entry
- Easy maintenance
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Dival 500

The **Dival 500** by Pietro Fiorentini is a **lever-operated** gas pressure regulator controlled by a diaphragm and contrasting regulated spring action. Mainly used for medium and low pressure natural gas distribution networks, as well as commercial and industrial applications. It should to be used with previously filtered non-corrosive gases. According to the European Standard EN 334, it is classified as **Fail Open**. The Dival 500 is **Hydrogen Ready** for NG-H2 blending.

District stations

Medium/small industry

Commercial users

Features	Values
Design pressure* (PS[1] / DP[2])	up to 1 MPa for BP, up to 2 MPa for MP and TR up to 145 psig for BP, up to 290 psig for MP and TR
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	• from (Pd + 0.01) MPa to 1 MPa from BP from (Pd + 0.01) MPa to 2 MPa for MP and TR • from (Pd + 1.45) psig to 145 psig from BP from (Pd + 1.45) psig to 290 psig for MP and TR
Range of downstream pressure (Wd[1])	• from 1.3 to 10 kPa for BP, from 10 to 30 kPa for MP, from 30 to 250 kPa for TR • from 5 to 40 “w.c. for BP, from 1.45 to 4.3 psig for MP, from 4.3 to 36 psig for TR
Available accessories	LA slam shut, relief valve, monitor version
Minimum operating differential pressure (Δp_{min}[1])	0.01 MPa | 1.45 psig
Accuracy class (AC[1])	up to 10
Lock-up pressure class (SG[1])	up to 20 (depending on version and set point)
Nominal size (DN[1,2])	DN 1”x1”; DN 1”x1” 1/2
Connections	Threaded Rp EN 10226-1, NPT ASME B1.20.1

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast Iron GS 400–18 UNI EN 1083 Aluminum EN AC 43300 UNI EN 1706
Cover	Aluminum
Seat	Brass
Diaphragm	Fabric finish rubber
O-ring	Nitrile Rubber
NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.	

Table 2 Materials

The **Dival 500** regulator is designed according to EN 334 and certified according to ANSI B109.4 and CSA 6.18 standards.
The product is certified according to European Directive 2014/68/EU (PED).
The regulator reacts in opening (Fail Open) according to EN 334.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN 334 | PED-CE | ANSI B109.4 | CSA 6.18

Dival 500 competitive advantages

- Balanced type
- Operates with low differential pressure
- High accuracy
- Fail Open plug and seat regulator
- Token IRV
- Internal sensing line
- Top Entry
- Easy maintenance
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Dival 600

Dival 600 is part of Pietro Fiorentini's range of **direct-acting** gas pressure regulators with diaphragm control and spring contrast. Mainly used in medium and low-pressure natural gas distribution networks, it can be used with pre-treated gaseous fluids. It is classified as **Fail Open** according to the European Standard EN 334. The Dival 600 is **Hydrogen Ready** for NG-H2 blending.

- Gas engines
- District stations
- Commercial users
- Regasification
- Medium/small industry

Features	Values
Design pressure* (PS[1] / DP[2])	up to 2 MPa up to 290 psi
Ambient temperature* (TS[1])	from -20°C to + 60°C from -4 °F to +140 °F
Inlet gas temperature*	from -20°C to + 60°C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax} [1])	from (Pd + 0.01) MPa to 2 MPa from (Pd + 1.45) psi to 290 psi
Range of downstream pressure (Wd[1])	from 1.2 KPa to 420 KPa from 0.18 psi to 60.9 psi
Available accessories	LA slam shut, built-in silencer, monitor version, overflow
Minimum operating differential pressure (Δp_{min} [1])	0.01 MPa | 1.45 psi
Accuracy class (AC[1])	up to 5
Lock-up pressure class (SG[1])	up to 10 (depending on version and set point)
Nominal size (DN[1,2])	DN 25 | 1"; DN 40 | 1" 1/2; DN 50 | 2";
Connections	• Flanged: class 150 RF according to ASME B16.5 and ASME B16.42 • ANSI Class 125 FF according to ASME B16.1, PN16/25 according to ISO 7005-1 and ISO 7005-2 • Threaded: Rp EN 10226-1, NPT ASME B1.20.1 (only size DN50 | 2")

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Equipment body	Cast iron GS 400-18 ISO 1083 Steel ASTM A216 WCB
Cover	Aluminum
Seat	Brass
Diaphragm	Canvas rubber
O-rings	Nitrile rubber

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Dival 600** regulator is designed according to European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Dival 600 competitive advantages

- Balanced type
- Operates with low differential pressure
- High precision
- Fail Open Regulator
- High turn-down ratio
- IRV token
- Top Entry
- Easy maintenance
- Built-in accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Norval

The **Norval** by Pietro Fiorentini is a **direct-operated** gas pressure regulator. Suitable for use with previously filtered gaseous fluids, it is mainly used for medium and low pressure natural gas distribution networks. It is classified as **Fail Open** according to the European Standard EN 334. The Norval is **Hydrogen Ready** for NG-H2 blending.

- Medium/small industry
- Gas engines
- Regasification
- District stations
- Commercial users

Features	Values
Design pressure* (PS[1] / DP[2])	up to 1.89 Mpa up to 275 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax} [1])	• for DN up to 3": from 0.01 MPa to 1.89 MPa | from 1.45 psig to 275 psig • for DN 4", 6" and 8": from 0.01 MPa to 0.86 MPa | from 1.45 psig to 125 psig
Range of downstream pressure (Wd[1])	• for DN up to to 4": from 0.8 kPa to 0.44 MPa | from 3.2"w.c. to 63.8 psig • for DN 6" and 8": from 1.2 kPa to 0.18 MPa | from 4.82"w.c. to 26 psig
Available accessories	SN Slam shut, silencer, ER monitor attachment
Minimum operating differential pressure (Δp_{min} [1])	10 kPa 40"w.c.
Accuracy class (AC[1])	up to 5 (depending on working conditions)
Lock-up pressure class (SG[1])	up to 10 (depending on working conditions)
Nominal size (DN[1,2])	DN 25 | 1"; DN 40 | 1" 1/2; DN 50 | 2"; DN 65 | 2" 1/2; DN 80 | 3"; DN 100 | 4"; DN 150 | 6"; DN 200 | 8"
Connections	Class 150 RF according to ASME B16.5 and PN16 according to ISO 7005

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A 216 WCB (all DN). Spheroidal ductile iron GS 400 – 18 ISO 1083 DN 150 (6") included.
Cover	From diameter 375 mm to 630 mm die stamped carbon steel From diameter 658 mm to 817 mm aluminum
Seat	Stainless steel
Diaphragm	Rubberized canvas (performed by hot-pressing process).
O-rings	Nitrile rubber
Compression fittings	On request

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Norval** regulator is designed according to the European standard EN 334.
The regulator reacts in opening (Fail Open) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Norval competitive advantages

- Compact and simple design
- High accuracy
- Fail Open plug and seat regulator
- Balanced type
- Top Entry
- Easy maintenance
- In-built accessories
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini

Reval 182

The **Reval 182** is one of the **pilot-operated gas pressure regulators** designed and manufactured by Pietro Fiorentini. This device is suitable for use with previously filtered non-corrosive gases, and it is mainly used for medium and low pressure natural gas distribution networks. According to the European Standard EN 334, it is classified as **Fail Close**.

Gas engines

Medium/small industry

District stations

Features	Values
Design pressure* (PS[1] / DP[2])	up to 2.5 MPa up to 362 psig
Ambient temperature* (TS[1])	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure (MAOP / p_{umax}[1])	from 0.02 to 2.5 MPa from 2.9 psig to 362 psig
Range of downstream pressure (Wd[1])	from 0.7 KPa to 1.2 MPa from 2.81”w.c. to 174 psig
Available accessories	DB/182 Silencer, PM/182 Monitor, SB/82 Slam shut, SA Slam shut HB/97 Slam shut, opening indicator
Minimum operating differential pressure (Δp_{min}[1])	0.01 MPa | 1.45 psig
Accuracy class (AC[1])	up to 2.5
Lock-up pressure class (SG[1])	up to 5
Nominal size (DN[1,2])	DN 25 | 1”; DN 50 | 2” DN 65 | 2” 1/2; DN 80 | 3”; DN 100 | 4”; DN 150 | 6”; DN 200 | 8”; DN 250 | 10”
Connections	Class 150 RF or RTJ according to ASME B16.5 and PN16, 25 and 40 according to ISO 7005

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment’s full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Cast steel ASTM A216 WCB for all sizes Ductile iron GS 400-18 ISO 1083 for Size ≤ 8”
Heads	Die stamped carbon steel
Stem	AISI 416 Stainless steel
Plug	ASTM A 350 LF2 Nickel coated on sealing surfaces
Seat	Steel + vulcanized rubber
Diaphragm	Rubberized canvas
O-rings	Nitrile Rubber
Compression fittings	In zinc-plated carbon steel according to DIN 2353 Stainless steel on request

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Reval 182** regulator is designed according to the European standard EN 334.
The regulator reacts in closing (Fail Close) according to EN 334.
The product is certified according to European Directive 2014/68/EU (PED).
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

EN 334

PED-CE

Reval 182 competitive advantages

- Compact and simple design
- High accuracy
- 1:500 High turn-down ratio
- Fail Close plug and seat regulator
- Built-in pilot filter
- Top Entry
- Easy maintenance
- In-built accessories
- Balanced type
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

FE 25/50

The **FE** is a two-stage gas pressure regulator by Pietro Fiorentini. It is particularly suitable for low pressure natural gas distribution networks for residential and commercial users. It should be used with previously filtered non-corrosive gases including biomethane and natural gas blended with hydrogen. According to the European Standard EN 334, it is classified as **Fail Close** because it is always supplied with an overpressure protection device (slam shut valve). The FE is **Hydrogen Ready** for NG-H2 blending.

Residential users

Features	Values
Design pressure* (PS[1] / DP[2])	up to 860 kPa up to 125 psig
Ambient temperature* (TS[1])	All versions -40°C to +65°C | -40°F to +150°F
Inlet gas temperature*	• Standard version -10°C to +65°C | 14°F to +150°F • Arctic version -20°C to +65°C | -22°F to +150°F
Inlet pressure (MAOP / p_{umax}[1])	from 10 kPa to 0.86 MPa from 1.45 psig to 125 psig
Range of downstream pressure Wds	• from 1.3 kPa to 16 kPa for BP version from 5"w.c. to 2.6 psig for BP version • from 16.1 kPa to 50 kPa for MP version from 2.61 psig to 7.25 psig for MP version
Range of downstream pressure Wdso	• from 1.3 kPa to 18 kPa for BP version from 5.2"w.c. to 2.6 psig for BP version • from 30 kPa to 80 kPa for MP version from 4.31 psig to 11.6 psig for MP version
Minimum inlet pressure and nominal capacity	• up to 24.8 Sm^3/h | 875 sfch with 28 kPa | 4 psig differential pressure • up to 42.7 Sm^3/h | 1,500 sfch with 69 kPa | 10 psig differential pressure
Accuracy class (AC[1])	10
Lock-up pressure class (SG[1])	20, minimum 0.75 kPa | 3" w.c.
Connections*	In-line 3/4" or 1" NPT according to ANSI B1.20.1, other configurations or connections on request

(1) according to EN334 standard
(2) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Aluminum
Cover	Aluminum
Diaphragms and seats	Nitrile rubber for BP version Rubberized fabric for TR version
Sealing rings	Nitrile

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

Construction Standards and Approvals

The FE regulator is designed according to the European standard EN 16129, Italian Standard UNI 11655, ANSI B109.4 and CSA 6.18.
The FE 25/50 BP versions are CSA certified.
ANSI Z21.80 certification is limited to 70 kPa | 10 psig maximum inlet pressure.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN16129 | UNI 11655 | ANSI B109.4 | CSA 6.18 | ANSI Z21.80

FE 25/50 competitive advantages

- Operates with low differential pressure
- Slam shut for over pressure
  Slam shut for under pressure
- Two-stage double diaphragm and single orifice regulator
- Highly customizable
- Suitable for 1 ft clearance installation with 2.5 cf/h limited venting
- Built-in thermal valve option
- Built-in strainer for seat protection
- Built-in flow limiter valve option
- Suitable for outdoor installations
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

FE 75/100

The **FE** is a two-stage gas pressure regulator by Pietro Fiorentini. It is particularly suitable for low pressure natural gas distribution networks for residential and commercial users. It should be used with previously filtered non-corrosive gases including biomethane and natural gas blended with hydrogen. According to the European Standard EN 334, it is classified as **Fail Close** because it is always supplied with an overpressure protection device (slam shut valve). The FE is **Hydrogen Ready** for NG-H2 blending.

Commercial users

Features	Values
Design pressure* (PS[1] / DP[2])	up to 860 kPa up to 125 psig
Ambient temperature* (TS[1])	All versions -40°C to +65°C | -40°F to +150°F
Inlet gas temperature*	• Standard version -10°C to +65°C | 14°F to +150°F • Arctic version -20°C to +65°C | -22°F to +150°F
Inlet pressure (MAOP / p_{umax}[1])	from 10 kPa to 0.86 MPa from 1.45 psig to 125 psig
Range of downstream pressure Wds	• from 1.3 kPa to 16 kPa for BP version from 5"w.c. to 2.6 psig for BP version • from 16.1 kPa to 50 kPa for MP version from 2.61 psig to 7.25 psig for MP version
Range of downstream pressure Wdso	• from 1.3 kPa to 18 kPa for BP version from 5.2"w.c. to 2.6 psig for BP version • from 30 kPa to 80 kPa for MP version from 4.31 psig to 11.6 psig for MP version
Minimum inlet pressure and nominal capacity	• up to 24.8 Sm^3/h | 875 sfch with 28 kPa | 4 psig differential pressure • up to 42.7 Sm^3/h | 1,500 sfch with 69 kPa | 10 psig differential pressure
Accuracy class (AC[1])	10
Lock-up pressure class (SG[1])	20, minimum 0.75 kPa | 3" w.c.
Connections*	In-line 3/4" or 1" NPT according to ANSI B1.20.1, other configurations or connections on request

([1]) according to EN334 standard
([2]) according to ISO 23555-1 standard
(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Aluminum
Cover	Aluminum
Diaphragms and seats	Nitrile rubber for BP version Rubberized fabric for TR version
Sealing rings	Nitrile

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

Construction Standards and Approvals

The FE regulator is designed according to the European standard EN 16129, Italian Standard UNI 11655, ANSI B109.4 and CSA 6.18.
The FE 75/100 BP versions are CSA certified.
ANSI Z21.80 certification is limited to 70 kPa | 10 psig maximum inlet pressure.
Leakage class: bubble tight, better than class VIII according to ANSI/FCI 70-3.

EN16129 | UNI 11655 | ANSI B109.4 | CSA 6.18 | ANSI Z21.80

FE 75/100 competitive advantages

- Operates with low differential pressure
- Slam shut for over pressure
  Slam shut for under pressure
- Two-stage double diaphragm and single orifice regulator
- Highly customizable
- Suitable for 1 ft clearance installation with 2.5 cf/h limited venting
- Built-in thermal valve option
- Built-in strainer for seat protection
- Built-in flow limiter valve option
- Suitable for outdoor installations
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

Governors

Pietro Fiorentini's **Governors** line of gas regulators are designed to comply with the latest CSA and international standards. They are suitable for indoor and outdoor installations with no modifications. The **Governors** family of regulators are ideal for a wide range of residential through large industrial applications. The materials and soft parts make them suitable for use with natural gas, LPG, Propane air and other non-corrosive gases. The Governors are **Hydrogen Ready** for NG-H2 blending.

Medium/small industry Commercial users Residential users

Features	Values
Design pressure*	up to 0.1 MPa up to 14.5 psig
Ambient temperature*	from -40 °C to +60 °C from -40 °F to +140 °F
Inlet pressure range bpu (MAOP)	• from Wd+0.75 KPa to 14 KPa STD version for CSA certified applications, otherwise up to 50 KPa from Wd+3"w.c. to 2 psig STD version for CSA certified applications, otherwise up to 7.25 psig • from Wd+1.7 KPa to 68.9 KPa Dual Cut (DC) version or OPD from Wd+7"w.c. to 10 psig Dual Cut (DC) version or OPD
Range of downstream pressure Wd	from 1.7 KPa to 3.5 KPa and up to 29.3 KPa non-CSA application from 2"w.c. to 14"w.c. and up to 4.25 psig non-CSA application
Available Accessories	In-built filter, vent limiter
Minimum differential pressure	from 0.75 KPa for STD version and 17.2 KPa for DC/OPD version from 3"w.c. for STD version and 2.5 psig for DC/OPD version
Accuracy class AC	up to 15
Lock-up pressure class SG	up to 30, minimum 0.75 KPa | 3 "w.c.
Nominal dimensions DN	DN 15 | 1/2"; DN 20 | 3/4"; DN 25 | 1"; DN 32 | 1-1/4"; DN 40 | 1-1/2"; DN 50 | 2"; DN 65 | 2-1/2"; DN 80 | 3"; DN 100 | 4"
Connections*	from 1/2" to 2" NPT according to ANSI B1.20.1 from 2-1/2" to 4" flanged class 150 RF according to ASME B16.5

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Aluminum
Cover	Aluminum
Diaphragm	Nitrile rubber
Sealing ring	Nitrile

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **Governors** regulators are designed and certified according to ANSI Z21.80 / CSA 6.22 and ANSI Z21.18 / CSA 6.3B standards.
The regulators react in opening (Fail Open) according to EN 334.
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

ANSI Z21.80 CSA 6.22 ANSI Z21.18 CSA 6.3B

Governors competitive advantages

- Balanced type
- Operates with low differential pressure
- High accuracy
- Fail Open plug and seat regulator
- In-built filter
- High turn-down ratio
- Easy maintenance
- Vent limiter option
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

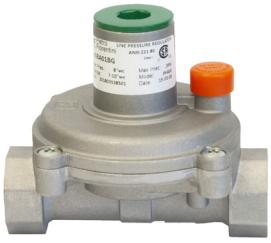
Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

Pietro Fiorentini

PF 400

Pietro Fiorentini's **PF400** line of gas regulators are designed to comply with the latest CSA and international standards. They are suitable for indoor and outdoor installations with no modifications. The **PF400** family of regulators are ideal for a wide range of residential through large industrial applications. The materials and soft parts make them suitable for use with natural gas, LPG, Propane air and other non-corrosive gases. The PF 400 is **Hydrogen Ready** for NG-H2 blending.



Gas engines

Commercial users

Residential users

Features	Values
Design pressure*	up to 0.45 MPa up to 65 psig
Ambient temperature*	from -40 °C to +60 °C from -40 °F to +140 °F
Inlet gas temperature range*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet pressure range bpu (MAOP)	• from 3.4 KPa to 13.8 KPa STD version for CSA certified applications, otherwise up to 68.9 KPa from 0.5 psig to 2 psig STD version for CSA certified applications, otherwise up to 10 psig • from 13.8 KPa to 68.9 KPa Dual Cut (DC) version for CSA certified applications, otherwise up to 103,4 KPa from 2 psig to 10 psig Dual Cut (DC) version for CSA certified applications, otherwise up to 15 psig
Range of downstream pressure Wd	• from 0.6 KPa to 3.5 KPa for CSA Class I. from 3.5 KPa to 13.8 KPa for non CSA versions. • from 2.5" w.c. to 0.5 PSIG for CSA Class I. from 0.5 PSIG to 2 PSIG for non CSA versions.
Available Accessories	In-built strainer, vent limiter
Minimum differential pressure	from 0.75 KPa for STD version and from 1.25 KPa for DC version from 3"w.c. for STD version and from 5"w.c for DC version
Accuracy class AC	up to 15
Lock-up pressure class SG	up to 30
Nominal dimensions DN	DN 10 | 3/8" ; DN 15 | 1/2"
Connections*	NPT according to ANSI B1.20.1

(*) Note: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.

Table 1 Features

Pietro Fiorentini

Materials and **Approvals**

Part	Material
Body	Aluminum
Cover	Aluminum
Diaphragm	Nitrile rubber
Sealing ring	Nitrile

NOTE: The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

Table 2 Materials

The **PF 400** regulator is designed and certified according to ANSI Z21.80 / CSA 6.22 and ANSI Z21.18 / CSA 6.3B standards.
The regulator reacts in opening (Fail Open) according to EN 334.
Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.

ANSI Z21.80 CSA 6.22 ANSI Z21.18 CSA 6.3B

PF 400 competitive advantages

- High accuracy
- Fail Open plug and seat regulator
- In-built strainer
- Easy maintenance
- Vent limiter option
- Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Pietro Fiorentini S.p.A.
Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

Pietro Fiorentini USA Inc
606 Park Drive | Weirton, WV 26062, USA | +1 304 232 9115
fio.westvirginia@fiorentini.com

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