CONTROVAL

TECHNICAL DATA SHEET

POWER AND UTILITIES

Boiler fuel regulation

Modular fuel regulation and feed unit for your boiler.

FUEL GAS · REGULATION · RELIEF



Boiler gas regulator skid, PDVSA

AT A GLANCE

A modular fuel feed for your boiler.

01
Modular fuel regulation and feed

02
Adapted to your boiler and fuel

03
Skid-mounted and pre-assembled

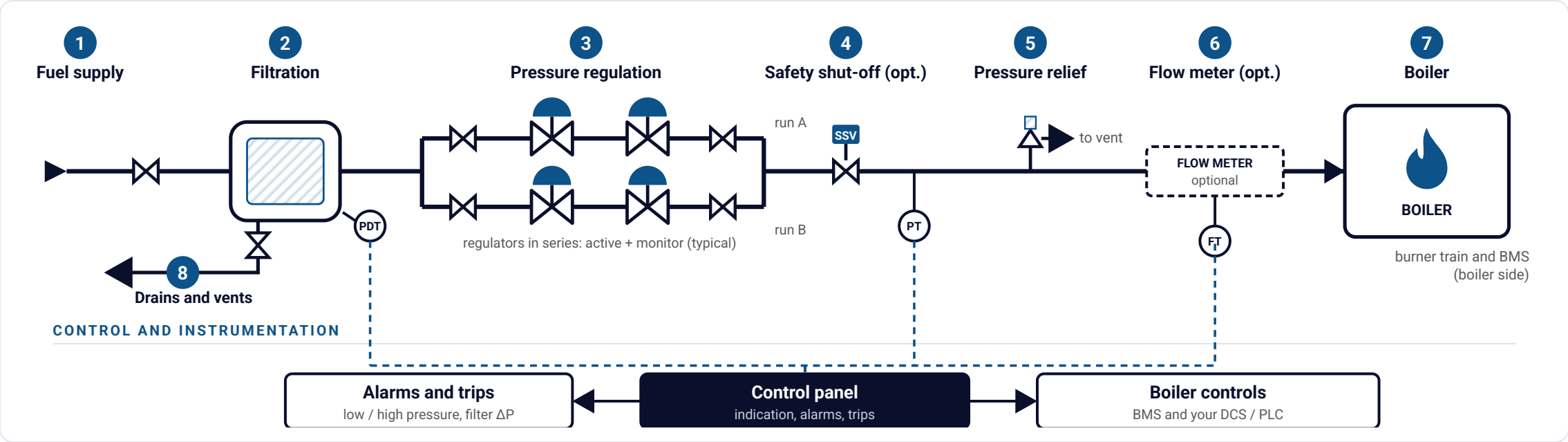
04
Designed to ASTM, ASME, ISO and API standards

How it works

The fuel regulation unit prepares the fuel and delivers it to the boiler at the pressure and flow it needs.

It is modular, so we adapt it to your boiler and your fuel. We have delivered boiler gas regulator skids for PDVSA.

A complete modular unit with piping, supports, tubing, valve assemblies, filters, instrumentation, and wiring and junction boxes on the skid. Our engineering team develops detailed engineering from basic information and technical specifications. Qualified welders work in carbon steel, stainless steel and special alloys. Each skid is pre-assembled mechanically and electrically as far as possible, then inspected and tested to the applicable codes, standards and specifications.



Typical schematic configuration, shown for reference only. The final design, equipment, instrumentation and applicable codes depend on the client's process conditions, specification and project requirements, and are defined during engineering.

Step by step

In the order the fluid passes through it.

1 **Fuel supply and isolation**
Gas arrives at the skid through an isolation valve. Supply pressure and its variation set the regulator design.

2 **Filtration**
A filter holds back solids and scale that would damage regulator seats and valves. Differential pressure shows when to service it.

3 **Pressure regulation**
Parallel runs, each with isolation valves, reduce the supply pressure to the burner pressure. One run can be isolated while the other works.

4 **Safety shut-off (optional)**
A safety shut-off valve closes the supply if the pressure goes out of limits. It is reset manually after the cause is cleared. It is separate from the burner safety shut-off valves of the boiler.

5 **Pressure relief**
A relief valve protects the downstream piping and the burner train from overpressure and discharges to a safe location.

6 **Flow measurement (optional)**
A flow meter records the fuel gas consumed by the boiler, for efficiency and reporting.

7 **Delivery to the boiler**
Regulated gas leaves to the burner train of the boiler. Burner management and flame safety remain on the boiler side.

8 **Drains and vents**
Low-point drains and vents allow servicing, purging and the safe removal of liquids or trapped gas.

▶ CONTROL AND RECORDS

Instruments and control panel
Pressure and differential pressure signals feed the panel for indication, alarms and trips, and can go to the boiler controls or your DCS.

Typical configurations and options

Fuel	Fuel gas; the unit is adapted to your boiler and fuel
Number of runs	Single run, or duty / standby runs to service one while the other works
Regulator type	Direct-acting, pilot-operated, or control valve with controller
Monitor regulator	Active + monitor in series, where extra protection is required
Filtration	Filter or strainer with differential pressure indication or transmitter
Safety shut-off	Slam-shut valve on high and low pressure (optional)
Overpressure relief	Relief valve sized per project, discharging to a safe vent
Flow measurement	Optional meter for fuel consumption of the boiler
Pilot gas	Separate pilot gas regulation, if the burner needs it
Instruments and panel	Gauges, pressure transmitters and a local panel with alarms; signals to your DCS or PLC
Area classification	Instruments, panels and wiring selected for the classified area
Materials and mounting	Carbon or stainless steel; modular skid, with platform where required
Instrument brands	We integrate Samson, Kimray, RMG, Farris, Yokogawa, Westlock and Swagelok, and consider your preference

Standards and documentation

Designed to ASTM, ASME, ISO and API standards. The applicable codes are agreed per project.

TYPICAL REFERENCES

ASME B31.3	Process piping
ASME B31.1	Power piping, for boiler external piping where applicable
ASME B16.34	Valves: flanged, threaded and welding end
API 520 / 521	Relief devices, and pressure-relieving systems
NFPA 85	Boiler and combustion hazards code, boiler side
IEC 60079	Equipment for explosive atmospheres, area classification
NFPA 70	National Electrical Code

TYPICAL DOCUMENTATION PACKAGE

- ✓ P&ID
- ✓ General arrangement
- ✓ Instrument datasheets
- ✓ Calculations
- ✓ FAT procedure and report
- ✓ Operation and maintenance manual

Factory acceptance test (FAT) in our workshops and site acceptance test (SAT) at the installation site.

Example: CO boiler of a catalytic cracking plant

SCOPE

Detailed engineering, procurement, fabrication, assembly, FAT and SAT. Installed on the main fuel gas line, the fuel line to each burner, the main natural gas pilot line and the pilot line to each burner.

FUEL GAS MAIN LINE OPERATING CONDITIONS

Flow 510 / 910 lb/h (min / max); pressure 101.5 / 68.2 / 43.5 psig (max / normal / min); temperature 158 / 104 / 86 F (max / normal / min).

Our work

Boiler fuel gas skids we have delivered



Boiler gas regulator skid, PDVSA

Parallel regulation runs with filters, regulators, relief and instrumentation feeding a boiler burner train.

Real projects, built and tested in our workshops. Ask us for references in your application.

DELIVERED	
Boiler gas regulator skids	**PDVSA**
Fuel gas regulation skid for a CO boiler, catalytic cracking plant	**Engineering, FAT and SAT**

Need one built for your process?

controval.com

Send us fluid, flow, pressure and temperature, or just your idea. An engineer returns a proposed configuration.

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