



# Blendaire II

SYNTHETIC NATURAL GAS MIXER

*A versatile gas mixing system  
for blending LPG and air that  
is **SAFE, RELIABLE,** and  
**EASY TO USE***



The **Blendaire II** is our next generation synthetic natural gas mixer. The **Blendaire II** evolved from the well-known **BLENDAIRE** mixer that dominated the utility and industrial SNG market for nearly 50 years.



## EASY TO USE

With its plug-and-play functionality, the **BLENDAIRE II** offers industrial and utility customers an SNG mixer that is easy to install, operate, and maintain. Ease-of-use features include:

- ▶ Very few set points to adjust.
- ▶ Few pneumatic lines means less chance for leaks and fewer tuning requirements and no complicated pneumatics to troubleshoot.
- ▶ Adjusting mixed-gas heating value is as easy as punching in a number.
- ▶ Less maintenance; fewer components that need to be rebuilt.
- ▶ Unit remains in standby and automatically starts when demand increases.
- ▶ Easy to set/adjust "cut in"/"cut out" pressure for line pack.
- ▶ All transmitters and flow meters have local displays.
- ▶ Convert units from imperial to SI on the fly.
- ▶ Plug and play: Simply connect power and run an Ethernet cable.
- ▶ PLC on skid; very little field wiring required.
- ▶ LPG flow meter confirms the amount of LPG consumption, allowing easy management of LPG inventory.
- ▶ Easy one-touch start.

## OPERATIONAL OVERVIEW

The **BLENDAIRE II** mixes LPG vapor and air to create synthetic natural gas (SNG), which simulates the combustion characteristics of natural gas. The **BLENDAIRE II** functions much like a pressure regulator, automatically responding to load changes in real time.

### Mixing and Operational Modes:

- **Two Mixing Modes:** Fixed Ratio; Auto Ratio Adjust (ARA)
- **Three Operation Modes:** Line Pack; Peak Shave; Supplementing

## SAFE

**BLENDAIRE II** is designed with a multiple redundant safety system that incorporates **18 points** of protection for safe, trouble-free operation. The LPG safety shutoff valve, the air flow control valve, and mixed-gas outlet valve will close in the event of a safety violation.

## RELIABLE

The **BLENDAIRE II** incorporates a **dynamic gain** control system. Dynamic gain results in a quick response and maintains a stable, controlled mix regardless of the flow control.

### These features further ensure reliability and accuracy:

- Quick stabilization: No flow to "on ratio" in less than 5 seconds
- Always accurate: Feed-forward mixing predicts proper ratio and stays on ratio in response to load changes.
- No mixing piston to stick and foul with dirty LPG (heavy oils)
- 100% system turndown

Algas-SDI has been mixing gases for over 60 years, and we've thought of everything.

## Blendaire II Components:

- 1 **Blendaire II flow meters confirm the exact flow rate of the air and LPG.**  
*Why Blendaire II meters are better:*
  - ▶ Good rangeability
  - ▶ Low pressure drop
  - ▶ Not adversely affected by LPG heavy oils
  - ▶ Quick response
  - ▶ Worldwide approvals (ATEX, CSA, etc.)
  - ▶ High accuracy
  - ▶ Internal temperature compensated; no additional temp transmitter required
  - ▶ No moving parts, unlike turbine meters
  - ▶ Local display
- 2 **Sliding gate-style flow control valve injects the exact amount of air to blend with the LPG.**  
*Why sliding gate is better:*
  - ▶ Slim profile
  - ▶ Easy-to-replace components; easily accessible
  - ▶ Linear CV
  - ▶ Large turndown
  - ▶ Easy to find replacement parts
  - ▶ Short travel; quick response (0.25")
  - ▶ Valve body made out of bar stock; high pressure rating
  - ▶ Includes all necessary safety approvals (PED, CRN, ASME, etc.)
- 3 **Gas safety shutoff valve stops the flow of gas in the event of alarm.**
- 4 **Mixed-gas safety shutoff valve stops the flow of mixed gas in the event of an alarm.**
- 5 **Stainless steel full port (positive shutoff) ball valves allow complete isolation. Competing systems use butterfly valves, which are NOT positive shutoff valves. While using butterfly valves costs less for the manufacturer, the end user bears the additional burden of this cost during installation. API 607 Fire-Safe.**
- 6 **Check valves feature metal-to-metal seat that are bubble-tight shutoff; higher than a Class VI rating.**
- 7 **Internal flow turbulator completely mixes the LPG and air before exiting skid.**

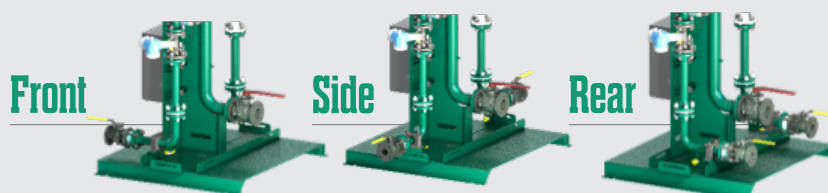
REAR VIEW

SIDE VIEW

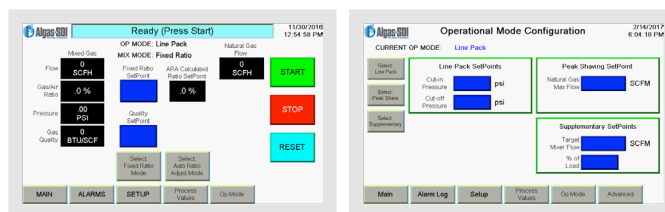


## FLEXIBLE CONFIGURATION

Inlets on the **BLENDAIRE II** can rotate in any direction, making field installation easier.



## CONTROLS



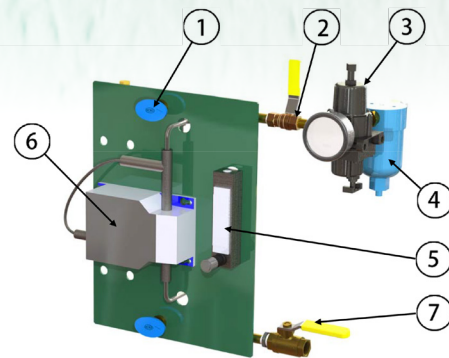
The **BLENDAIRE II** utilizes state-of-the-art PLC control technology.

- Remote touchscreen (color) included as a standard feature.
- Ethernet switch allows customer to network their system and view remotely in real time.
- Data logging included.
- Totalizer included.

# The Blendaire II Advantage

## INTEGRATED GAS DENSITY METER

Algas-SDI can install its optional DS2 densitometer onto the **BLENDAlRE II** skid and integrate it into the **BLENDAlRE II** controls. The Class I, Division 1 DS2 measures the density of the gas and provides a 4–20 mA signal. Our proprietary “Xact Sample” design will automatically determine the ratio of propane to butane in the LPG feedstock and automatically toggle back to sample the LPG/air mix. Since the LPG feedstock is known, the PLC will be able to determine the necessary ratio of LPG to air and will instruct the **BLENDAlRE II** to control to that ratio.



## BLENDAlRE II DESIGN ADVANTAGES

The **BLENDAlRE II** offers numerous design advantages that make it the perfect mixing system for any need:

- ▶ ARA (automatic ratio adjustment) is a standard feature; no extra charge.
- ▶ Peak shaving option is easy and inexpensive to add for utility applications or applications where the customer wants to use as much natural gas as possible.
- ▶ Line-pack feature means 100% turndown for low-flow conditions and reversing furnace applications (glass).
- ▶ Lower pressure drop means less stress on the system. This could result in the elimination of the pump or the installation of a smaller vaporizer.
- ▶ Small footprint.
- ▶ Suitable for high-pressure applications.
- ▶ Quick delivery: Algas-SDI stocks major components, reducing delivery time.
- ▶ Flexibility: BLENDAlRE II design allows mixer to blend different ratios of different gases for biogas, waste gas, and landfill gas applications.
- ▶ Pre-mixing combustion applications.
- ▶ System includes instant flow and totalizer so the operator can optimize performance.

## Approvals/Design Standards



NFPA 58 and 59 compliant



FM approved



Fabricated to ASME B31.3 standards

Standard configuration is Class I, Division 2; also available in Class I, Division 1

Algas-SDI developed its first vaporizer in 1932. Over eighty years later, we still lead the market in quality, innovation and commitment to our purpose. Our products allow businesses located off the gas grid or under curtailment, to operate. We eliminate downtime ensuring workers can work and goods and services can flow to market.



151 S. Michigan Seattle, WA USA 98108

P 206-789-5410 | F 206-789-5414

sales@algas-sdi.com



algas-sdi.com