EZ® Series: Modular Endothermic Gas Generator
Advanced Design for Practical, Efficient, Expandable Operation
**EZ® Series**

Best in Class from a Market Leader

**AFC-HOLCROFT MODULAR GENERATORS** are compact and designed to be located in areas traditionally unsuitable due to low ceiling height. Multiple module configurations provide the ability to expand capacity with ease.

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**Modular / Expandable**
- Single vertical retort per module
- Easy access to retort via hinged door
- Demand-based generator controls
  - Standalone: 1800 CFH
  - 1 module: 4500 CFH
  - 2 modules: 9000 CFH
  - 3 modules: 13500 CFH

**Advanced control**
- Precise gas mixing
- Multiple customizable control loops
  - Temperature
  - Dew point
  - Pressure
- Fully automatic air/gas flow and turndown
- Dedicated burnout/purge blower
- Advanced HMI touch screen
- Robust I/O set
- AutoGen standard on AFC-Holcroft EZ® Generator
KEY FEATURES

- Built-in chart recorder – Trending of all process data: Endo flow, ratio, dew point, outlet temperature
- 6:1 turndown or better – Included in base price
- Automatic air/gas ratio control
- Fine control – Separate, automated gas trim valve
- Auto-corrects ratio-to-dewpoint – Bump feature

- Automatic header pressure control loop – VFD blower
  - Eliminates travel-stop (bypass) regulator
  - Negative draw requires only 1.5 psi gas pressure
    - Eliminates higher (5 psi) gas utility
- Ceramic fiber module insulation – 12 in (305 mm)
- Heat exchanger – Low outlet temperature (monitored)
- Built-in chart recorder – Trending of all process data: Endo flow, ratio, dew point, outlet temperature

- Automated ratio-to-dewpoint – Adjusts ratio without operator intervention
  - Normal operation:
    - Dual-valve (automated coarse and trim) concept developed by AFC-Holcroft
    - Trim valve allows fine air/gas adjustments without disrupting coarse PID loop
  - “Bump” auto-correct operation:
    - Reacts if trim valve sits near its extreme (open or closed) for too long
    - Adjusts coarse ratio within limits – Re-centers trim valve
    - Deviation from dew point determines magnitude of coarse adjustment (bump)
  - Configurable
    - Set delay before bump occurs
    - Adjust trim position that triggers bump (10%, 20%, etc.)
    - Enable/Disable bump auto-correct as desired

AUTOMATED OPERATION, INTUITIVE USER INTERFACE

- Heat-up cycle – Automated dry out and ramp-to-temp
- Burnout cycle – Automates steps to burnout catalyst
- Dew point control – Reduces operator intervention
  - HMI – Easy navigation, anti-glare screens
  - On-screen fault troubleshooting
    - Step-by-step tips explain how to resolve each alarm
  - On-screen Owner’s Manual
    - Link from HMI screen to key procedures: Startup, shutdown, emergency procedures
- Multilingual screens – Global language support
- User roles – Password protect advanced screens
ENDOTHERMIC GAS AT A GLANCE

- Protective atmosphere created by partial reaction of an air-gas mixture
- Mixture occurs in an externally heated, catalyst-filled chamber (retort)
- Gas “cracking” produces protective atmosphere

<table>
<thead>
<tr>
<th>Raw Components</th>
<th>Resulting Components</th>
<th>Typical Gas/Air Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>73% Air</td>
<td>40% Nitrogen</td>
<td>2.7:1</td>
</tr>
<tr>
<td>27% Methane</td>
<td>40% Hydrogen</td>
<td></td>
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<tr>
<td>1,904°F (1,040°)</td>
<td>20% Carbon Monoxide</td>
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<tr>
<td></td>
<td>0.2 - 0.5% CO₂</td>
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