Overview

ACS understands the challenges of obtaining custom test equipment that fits operational requirements while staying within budget and delivering on schedule.

ACS uses a team approach to working with customers and suppliers to ensure the success of the custom test equipment and overall project.

ACS has a qualified team of mechanical and electrical design engineers, designers, electricians, machinists, and welders to provide functional, flexible, and serviceable equipment solutions.

Description

ACS provides custom gaseous fuel systems that can be used for fuel measurement, blending, safety, or any combination of these. The gaseous systems can be designed to be wall or floor mounted with a “panel” design or a portable “skid” design to be moved from test cell to test cell.

ACS fuel measurement systems are designed to handle a variety of individual gases. Blending systems can handle multiple gases in various concentrations while measuring the flow rates of each. Corrosion resistant materials and wash-down rated electrical devices are used to ensure a durable, quality system.

ACS fuel safety systems are designed to help ensure gaseous testing facilities meet relevant codes and provide the appropriate level of safety and peace of mind to a customer. The safety systems can be packaged into tight spaces within the facility or test cell to meet existing, specific space constraints.

ACS is a single-source provider of fully integrated facility and equipment solutions, serving the international engine- and vehicle-testing markets. We specialize in the comprehensive design, construction, integration, and commissioning of development and production test facilities and equipment for engine, vehicle, and components manufacturers.

www.acscm.com
Features

- Measure mass flow of blended gas with high accuracy
- Measure volumetric flow
- Compare density of blend to reference density
- Measure and regulate blended supply pressure to engine
- Spring-closed vent lines for service of the system
- Can meet IEC 61511, ISA 84, and NFPA and NEC codes for flammable fuel and explosive environments.

- Flanged devices for faster service and calibration
- Multiple ports for additional gauges or sampling
- Fail-closed valves for safe containment
- Pressure switches shutdown test prior to unsafe operating conditions
- Pneumatic valves with low voltage air solenoids for safest operating environment

Fuel Measurement Case Study

*Please contact us to discuss your unique requirements.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Cell Rating</td>
<td>750 - 3,000 kW [1,000 - 4,000 HP]</td>
</tr>
<tr>
<td>Engine Output</td>
<td>2,250 kW [3,000 HP]</td>
</tr>
<tr>
<td>Natural Gas Flow Range</td>
<td>350 - 14,400 lpm [90 - 3,800 gpm] @ 8 bar [120 psi] pre-blend</td>
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<tr>
<td>Propane Flow Range</td>
<td>450 - 5,300 lpm [120 - 1,400 gpm] @ 7 bar [100 psi] pre-blend</td>
</tr>
<tr>
<td>CO2 Flow Range</td>
<td>5 - 22,500 lpm [1 - 6,000 gpm] @ 7 bar [100 psi] pre-blend</td>
</tr>
<tr>
<td>Blended Gas Flow Range</td>
<td>400 - 24,900 lpm [110 - 6,600 gpm] @ 4 bar [60 psi]</td>
</tr>
<tr>
<td>Measurement Uncertainty</td>
<td>less than +/- 0.5% inaccuracy in range (meter accuracy)</td>
</tr>
<tr>
<td>Facility Supply to System</td>
<td>3.8 - 4.3 bar [54 - 62 psi]</td>
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<tr>
<td>Regulated Supply to Engine</td>
<td>0.3 - 0.5 bar [3.6 - 7.3 psi]</td>
</tr>
<tr>
<td>Output data</td>
<td>Hardwire interface to DAQ system</td>
</tr>
<tr>
<td>Dimensions</td>
<td>180 cm [71&quot;] wide x 160 cm [63&quot;] tall x 50 cm [20&quot;] deep</td>
</tr>
<tr>
<td>Estimated Weight</td>
<td>300 kg [661 lbs]</td>
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Benefits

The unique ACS approach provides many benefits, including the following:

- Customer design criteria discussed and documented at beginning of project
- Collaborative design efforts between the customer, ACS, and our experienced supplier base
- Equipment designed to meet custom requirements and industry standards
- Integrated into new or existing facility and all connected systems
- Factory acceptance tested at ACS and fully commissioned at customer site
- Equipment operation and maintenance manuals

Contact us to discuss your test application or to learn more.