

Airgas High-Flow Process Chemical Delivery Systems

The Issue

Many chemical processes require the use of liquefied chemical gases for various purposes. Often, many of the processes using these gases are intermittent batch operations but require large flow rates for a relatively short time. Due to the flow-rate limitations prevalent with delivery cylinders, production facilities were required to install large bulk systems to achieve the desired flow rates. Large bulk systems, however, require significant capital investment, are located outside and far from the point of use, and have a relatively high risk of release and chemical exposure to personnel.

The Solution

The Airgas Chemical Delivery System (CDS) is designed to give a continuous high-flow supply of liquefied chemical gases from gas cylinders. The need for a bulk tank is eliminated and the system can be located near the use point. The safety benefit of this approach must also be highlighted. The built-in safety features reduce the overall risk of personnel exposure when compared to that of a bulk installation.

The CDS is designed to withdraw liquid process chemicals from various size cylinders (with dip tubes), vaporize the liquid in an electric vaporizer, automatically change from a depleted “primary” side to a “reserve” side based on cylinder weight, and to monitor for a gas leak using local and remote gas detectors. The manifold/system has manifold venting capabilities (both manual and automated options), local emergency shutdown, and remote shutdown capabilities—remote “e-stop” and gas detection, and enclosure venting if used with cabinets indoors.

CHEMICAL DELIVERY SYSTEMS



Design Features

- For use with cylinders, ton containers, and tube trailers
- Uninterruptible supply via switch over control system
- Designed in accordance with recognized codes and standards such as:
 - ASME
 - NFPA
 - ANSI
- Available Safety Features including:
 - Gas Detection System
 - Emergency Shutoff System
 - Excess Flow Valve
 - Automated and Manual Purge System
 - NFPA Compliant Gas Cabinet (for indoor cylinder use)
- Various operating voltage available
- PLC based controlled operating system

The Airgas CDS can be configured for various flow rates and delivery pressures.

The Airgas Engineering Solutions Group custom engineering capabilities can help with all your liquefied gas process chemical applications.

Applicable Gases

Ammonia
Chlorine
Sulfur Dioxide
Hydrogen Chloride
SO ₂
HCL
Methyl Chloride
Consult factory for others