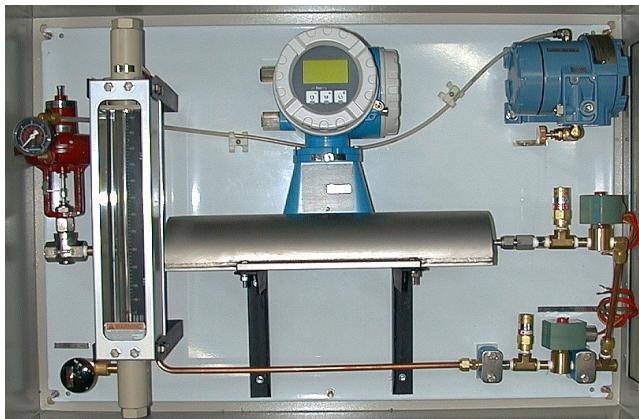
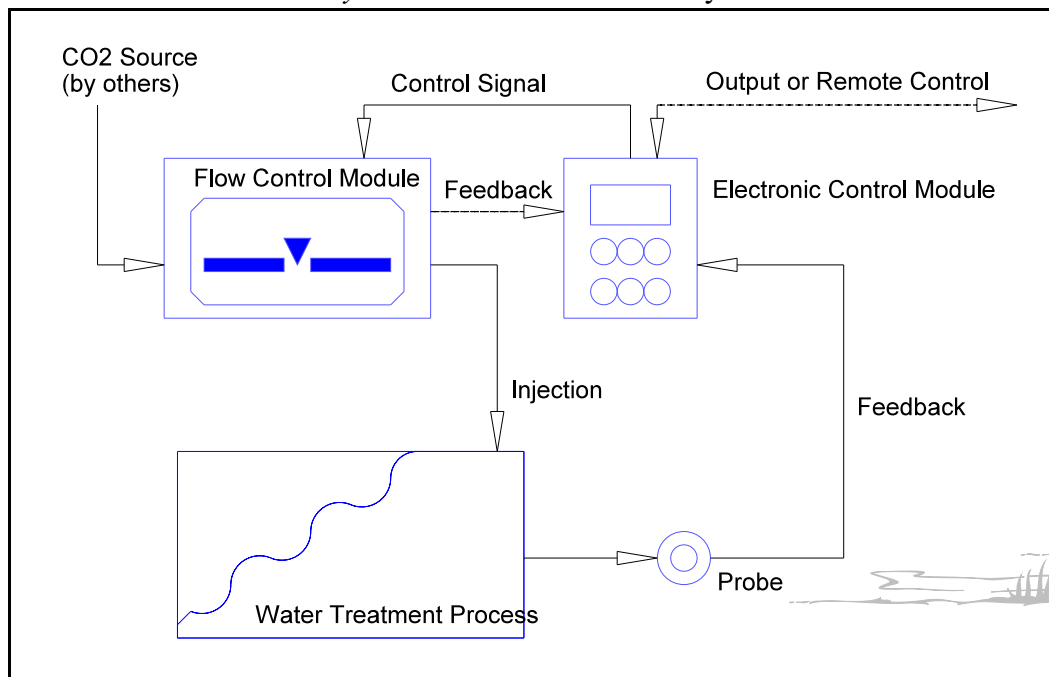


pH Reduction Systems Using Carbon Dioxide

In order to comply with today's standards, Carbon Dioxide (CO₂), a clean, safe and efficient chemical is used to reduce pH levels in wastewater treatment. With *Cryotronic*'s advanced controlled injection and precise process monitoring, CO₂ will transiently dissolve in water to form carbonic acid and thus neutralize alkalinity.

As we approach the second decade of the 21st century, most industries face tougher laws on effluent wastewater standards. The discharge of industrial or municipal wastewater is controlled by permits issued by the governing bodies. These permits set specific limits and parameters for pollutants such as BOD, COD, pH, hydrocarbons, metals, phenol, .. etc. Being able to control the pH of effluent from industrial facilities is therefore essential to achieve these standards.

Cryotronic Process Control Layout

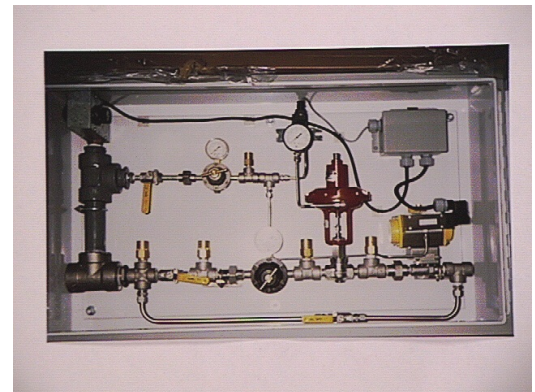
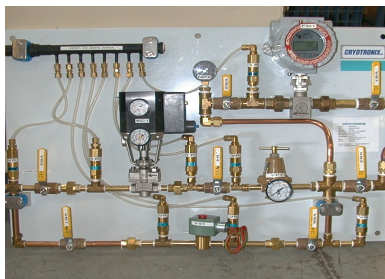


pH Reduction Control System

Industrial wastewater chemicals can increase the pH of wastewater to levels no longer tolerated by governmental standards. Present regulations require that alkaline effluent discharge to a municipal sewer system have pH levels below 10. Such treatment is possible using carbon dioxide as a reagent. Cryotronix's Series FPH control systems provide a safe, effective and economical method of meeting today's environmental standards by controlling the flow of CO₂. These fully automatic units can adapt to any process requirements for quick response time without sacrificing efficiency. Built for a wide range of flow capacities, FPH Series modular design permits adaptability to existing control and process requirements. FPH units are designed for up to 3000 psig, with inlet and outlet configurations to allow for ease of installation, maintenance and upgrade. At Cryotronix, we test and electronically calibrate each unit prior to shipment.

Features :

- Free floor space. Eliminates acid storage
- Eliminates acid handling hazards
- Wide flow range
- Precise flow control
- Minimal maintenance cost
- Diverse injection configurations
- Upgrade modules available



Series	Inlet & Outlet Size (in)	Operating Mode	Product Phase	Electronic Controls	Inlet	Outlet
FPH	04 = 1/4" 06 = 3/8" 08 = 1/2" 12 = 3/4" 00 = Specify	A= Auto On/Off P= Proportional	G= Gas L= Liquid	0= No controls 1= With controls (Bulletin EPC602)	L= Left R= Right T= Top B= Bottom	L= Left R= Right T= Top B= Bottom

Example : 100FPH-08PL0RL

will denote a CO₂ flow control panel for industrial effluent treatment. Panel comes with a proportional 1/2" liquid manifold with inlet source on the left and outlet to injectors to the right with electronic controls supplied by customer.



Carbon Dioxide pH Reduction Systems

Bulletin 100

Concurrently with EPC series electronic feedback controls, *Cryotronic* CO₂ flow control systems offer many advantages over traditional acid systems :

- Elimination of safety hazards associated with handling of acids
- Low capital investment
- Low maintenance costs
- Precise control of pH levels
- No risk of over-shooting (associated with acids)
- Increased storage capacity
- Reduced handling costs
- Increase equipment life due to non-corrosive CO₂
- Overall cost saving in water treatment

With the customer always in mind, *Cryotronic* also manufactures and supplies other system components such as pH controllers, liquid vaporizers, gas heaters, analysers, ...etc; all assembled, calibrated, tested and carry our exclusive warranty of proper operation and your valued satisfaction.

pH Reduction system Data Form				
Name :			Telephone:	
Company Name :			Fax :	
			email :	
General Information				
Type of Water : <input type="checkbox"/> Process <input type="checkbox"/> Potable <input type="checkbox"/> Waste <input type="checkbox"/> Other : _____				
Average Flow	_____ gal./min	_____ m ³ /hr	At pH : _____	Desired pH : _____
Maximum Flow	_____ gal./min	_____ m ³ /hr	At pH : _____	Desired pH : _____
Existing Equipment Information				
Treatment Basin <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Capacity : _____ gal. _____ m ³				
Circulation Pump <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Capacity : _____ gal. _____ m ³				
Mixer <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Capacity : _____ gal. _____ m ³				
Acid Consumption				
Type of Acid <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> HCl <input type="checkbox"/> Other : _____				
Actual Consumption _____ lbs/month _____ kg/month				
Actual Control System <input type="checkbox"/> Proportional <input type="checkbox"/> Direct Make: _____				