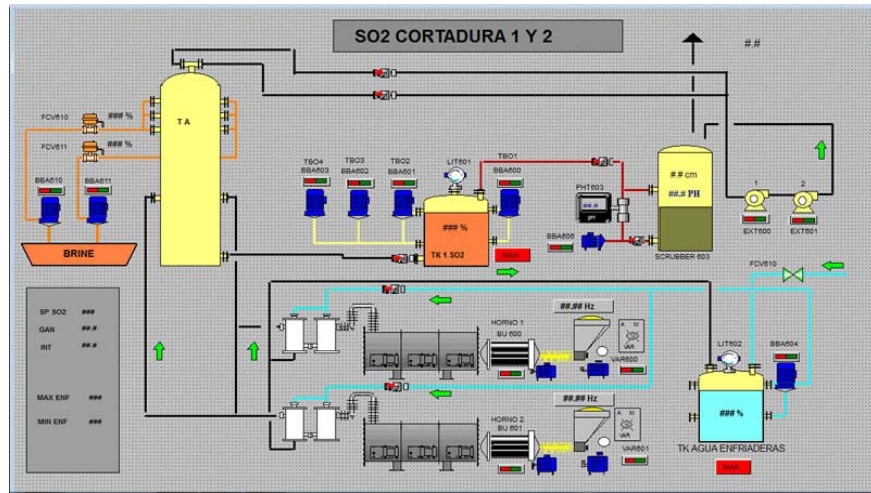


Application Brief: Opto 22 Control Systems in Copper and Iodine Mining

Northern Chile, renowned for its mining industry, is the location of mining companies that extract and produce thousands of tons of copper and iodine for export worldwide. Three of the leading mining companies there use Opto 22 industrial automation systems to accurately and affordably control critical processes that produce copper, iodine, and nitrates.



Human-machine interface (HMI) at an iodine processing plant.

Copper Mining and Production

A company in the province of El Loa produces copper by leaching oxide and sulfide ores extracted at its open-pit mining complex. In copper leaching, thousands of tons of ore are placed in long rows called “leach pads” and sprayed continually with sulfuric acid. Copper is recovered from this process. More than 120 individual Opto 22 automation systems are part of the overall system that monitors and controls the precise delivery of sulfuric acid to each leach pad. The Opto 22 systems monitor pressure in the pipes transporting sulfuric acid. Pipe pressure data is then sent to an Allen-



Ores are extracted at vast open-pit mines.

Bradley PLC that adjusts pumps and valves to maintain the correct pipe pressure.

Iodine Mining and Production

In the neighboring province of Antofagasta, there is a mining company that extracts caliche ore (a natural form of sodium nitrate), leaches it with water to create a sodium- and nitrate-bearing solution, and then chemically processes that solution to produce iodine. Another company in Antofagasta produces iodine in the same way and also produces nitrates using a similar method. Control systems for the chemical plants at these companies use Opto 22 controllers, I/O modules, and HMI software.

Innovative, Accurate, and Reliable Products

The Opto 22 hardware and software products in these mining applications have a deserved reputation for innovation, accuracy, and reliability. For example, Opto 22 makes a point of incorporating modern, widely used networking technologies like standard Ethernet and WiFi. The company’s I/O systems include multiprotocol Ethernet

Application Brief: Copper and Iodine Mining Companies

and serial communication with PLCs and other automation systems. Also, throughout its 40 years of operation, Opto 22 has continuously refined its product engineering and fabrication processes. The result is I/O components that handle analog and digital signals with precision, plus reliable, long-lasting hardware suitable for harsh environments.

About Opto 22

Opto 22 develops and manufactures hardware and software for applications involving industrial automation and control, energy management, remote monitoring, and data acquisition. Designed and made in the U.S.A., Opto 22 products have an established reputation worldwide for ease-of-use, innovation, quality, and reliability. Opto 22 products, including the *groov* mobile operator interface, use standard, commercially available networking and computer technologies, and are used by automation end-users, OEMs, and information technology and operations personnel in over 10,000 installations worldwide. The company was founded in 1974 and is privately held in Temecula, California, U.S.A. Opto 22 products are available through a global network of distributors and system integrators. For more information, contact Opto 22 headquarters at +1-951-695-3000 or visit www.opto22.com.

About Interlog Electrónica Ltda.

Interlog was founded in 1980 to provide electronic equipment and engineering services for use in real-world applications. Since its beginning, Interlog has distributed Opto 22 products and has participated in projects and applications in mining, commercial fishing, food processing, ceramics, cosmetics, petroleum refining, printing, fruit processing, paper, aquaculture, fresh water management, and electrical transmission, among others. Since the beginning of 2002, Interlog has served as the Opto 22 distributor for Argentina, Bolivia, Chile, and Peru, employing our experience with Opto 22 and the knowledge gained since our foundation. Interlog supplies all Opto 22 products, related engineering services, technical support, and training certified by Opto 22.