

HYDROGEN SENSOR-DESIGN BUILD

Hydrogen sensor unit with front panel opened



Hydrogen Sensing Unit with front panel closed



Problem: A customer's process involved reacting metals with acid which produced high levels of hydrogen gas. This gas could lead to a catastrophic explosion. Project Technologies and Services (PTS) was asked to create a sensing unit to detect the high levels of hydrogen in the reactor tank.

Solution: Project Technologies & Services (PTS) worked together with the customer to design and build a hydrogen sensing unit to eliminate the acid fumes and water vapors prior to sensing the gas for hydrogen levels.

The customer had a similar unit installed in another facility, however, the unit needed to be redesigned and modified. In addition, the customer's process released large amounts of acid fumes and water vapor which reduced the life of the existing hydrogen sensor.

PTS reviewed the existing unit and designed a new hydrogen sensing unit. PTS refined the design, including filling the columns with a packing material to increase efficiency, based on the customer's requests and the advice of PTS own experienced engineers.

PTS built the hydrogen sensor based on the new design. PTS then installed the PLC programming and tested the equipment to ensure the system functioned as designed.

PTS included two operations and maintenance manuals with the new hydrogen sensing unit. Each manual included: a description of the system, installation instructions, maintenance requirements, installed parts information, the engineering drawings, and the program installed into the PLC. The manuals were sent in hopes of easing installation, simplifying maintenance, and increasing customer satisfaction.