

## **Introducing the EcoGuard POU Process Gas Abatement System**

The EcoGuard POU abatement series is a dramatic departure from existing abatement systems. Based on modular design, the EcoGuard POU series provides an unheard of degree of flexibility and efficiency. Since it is more economical to produce products on a production line than one or two at a time, the EcoGuard POU series can be produced using these cost effective production line techniques while retaining the flexibility of custom systems. Maintenance will also benefit from modular components because spare modules can be kept in stock and simply swapped out in just minutes when modules are serviced. This procedure keeps down time to an absolute minimum, and in many cases, modules can be swapped while the system remains on line.

### Function modules

The actual abatement process is done for each input using function modules. Three basic function modules, pyrolytic decomposition /oxidization, assisted pyrolytic decomposition / oxidization, and Silane self oxidizer cover virtually all of the needs of process gas abatement. Each input is equipped with the function module that is best suited to abate the process exhaust connected to it. As an example, if a process exhaust only contains Silane, then a Silane self oxidizer module would be used while another input might require a pyrolytic decomposition / oxidization module to properly abate that exhaust stream. Modules that require fuel are available in either Hydrogen or Natural gas versions.

### Fuel-when-needed

Fuel consumption is minimized by the ability of function modules using fuel to operate in a fuel-when-needed mode. By communicating with the process tool, only a very small amount of fuel is consumed for a pilot flame until the tool alerts the EcoGuard POU that process gases requiring abatement will be in the exhaust gas and the system will turn on the proper fuel flow to the function module. When the process tool then instructs the EcoGuard POU that there is no longer a need for abatement, the fuel flow to the function module returns to just the pilot flow. If it is not possible to communicate with the process tool, fuel remains flowing at all times however since the function module can be set for maximum destruction using only the fuel necessary, this mode too is very efficient.

### System control and Operator interface

One rugged PLC with the program on-board in a non-volatile ROM chip controls the system. The operator interface is by way of a 6" touch panel located on the front of each system. The PLC can easily be networked to add any EcoGuard POU system to an existing facility monitoring system.

## Inherent Safety

The EcoGuard POU series is designed with a passive safety feature to add to safe operation even under unexpected events such as power or fuel flow interruption during operation. Since the EcoGuard POU uses air dilution for exhaust temperature control, this air flow is also set to provide dilution to reduce pyrophoric and flammable components in the process tool exhausts to below their lower explosive limits (LEL) along with a design that is extremely plug resistant to eliminate the need for any by-pass pathways. These pathways have been shown to be a key element in the formation of dangerous exhaust conditions in the facilities of unsuspecting users of abatement systems equipped with them.

Some fabrication processes use Hydrogen gas as a major component of the tool exhaust. Extra care should always be taken with these exhausts in case air finds its way into the process tool exhaust line. This can set up a flammable mixture and when the mixture meets an ignition source, the mixture can ignite and travel up the process tool exhaust to the point where the mixture occurs. The EcoGuard POU series has flashback arresting functions already present in the control software and the simple addition of a flame detector and quenching gas, usually Nitrogen, gives any EcoGuard POU system full flashback protection.

## Capacity and Expandability

The EcoGuard POU series is available in three sizes to cover all anticipated capacity needs and can be configured to have up to four process inputs. Any EcoGuard POU can easily be coupled with our low restriction water scrubber or reactive scrubber when needed. These features along with the modular design and multi fuel ability makes the EcoGuard POU series truly unique in process gas abatement systems available today.