

Immediate  
protection.

Continuous  
monitoring.



**Anchor**™  
Emergency Shutdown System



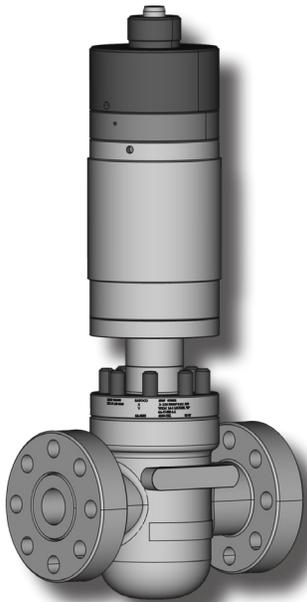
# Anchor your site



Immediate protection.  
Continuous monitoring.

Safoco's Anchor™ Emergency Shutdown (ESD) system has been engineered and built with a single purpose; to protect you, your coworkers, the environment, and your investment.

Specifically, the Anchor ESD system is a self-contained autonomous emergency shutdown system for wellhead wing and master valves equipped with pneumatic or hydraulic actuators. It includes a gate valve (any size), electrically-driven hydraulic pump and manifold actuator, and a Safety Automated Monitoring Instrument (SAMI), the industry's premiere computer control system.



The Anchor ESD system is an all-in-one suite that powers the electronics, communication package, and hydraulic or pneumatic actuator system. So, with the Anchor ESD system, you don't have to rely on an external power supply to activate the system.

If needed, the Anchor ESD system can include satellite communications so no matter where your site is, you can shut down a wellhead or flow lines remotely and be confident that with a Safoco Anchor ESD system in place, you're in control at all times.

Above all, the Anchor ESD is a proven technology that can be configured to your requirements and can stop a hazardous situation in its tracks - virtually instantaneously. So, with an Anchor ESD on site, you're not just saying "Safety first," you're demonstrating it.

## SAMI makes the difference

Control and monitoring of the Anchor ESD system come from Safoco's Safety Automated Monitoring Instrument (SAMI). The SAMI uses a low power microprocessor to monitor a variety of pressure, temperature, level and other signals and controls the master and wing valve actuation to make the emergency shutdown system close on alarm or close via command from the communication system.

The SAMI is SCADA ready for communication to either an existing data infrastructure or to Safoco's Data Warehouse system known as ESD ValveScape. In remote areas, communication is achieved through iridium satellite systems, cell communication systems, or through existing RTU communication systems where available.

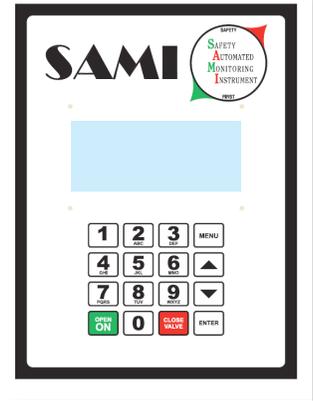
The SAMI is flexible in its input and output structure and accommodates a variety of wellhead and pipeline sensors including, but not limited to, multiple pressures, temperature, fluid level, electronic sand probe, H2S, fire alarm, valve position sensors as well as a number of internal functional and diagnostic inputs such as battery monitor, hydraulic level sensor, hydraulic or pneumatic pressure sensors (depending on the type of valve actuator). Plus, the SAMI monitors its own health with watchdog timers and will close the ESD valves and send an alarm should the processor or battery fail.

With SAMI, you can select the functional I/O parameters of an individual well with standard pressure parameters set for 5K, 10K, 15K and 20K PSI transducers. Other pressure ratings are available on request.

The standard I/O parameters include Local Close operators as well as six user-defined contact closure or ten bit analog inputs. The six user-defined I/O parameters may be any combination of six digital or analog inputs. And, the standard SAMI controller has two high resolution, high speed sixteen bit analog inputs typically used for wellhead pressure and downstream pressures. Each of these inputs has user defined High and Low pressure trip points so when the SAMI control system is used with the Valvescape Data Warehouse system, the SAMI will initiate an alarm due to any input that is out of the user-defined criteria.

## Let's talk specifics

To learn more about the Anchor ESD system and how it can help you protect your people and assets, contact us today.



*Providing there are no alarm conditions, the SAMI can close and open an emergency shut-down valve thus verifying the integrity of the ESD system.*



# Anchor<sup>TM</sup>

Emergency Shutdown System



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