

Well Flow Management

Well Testing | Safety system

Emergency Shutdown System - Electronic (SIL2)

The Emergency Shutdown (ESD) is the primary safety system in the event of an uncontrolled escape of hydrocarbons at surface. The newly developed Expro Electronic ESD system replaces the previously pneumatically initiated process with electronic pulse activation.

As previously the activation closes the actuated flowline valve of the Surface Test Tree and if applicable an additional inline valve installed upstream of the Choke manifold. A shutdown is activated by either high or low pressure/level or push buttons located around the rig.

Dissimilar to the current conventional pneumatic system, the electrical system is more efficient and safer as it does not require the depressurization of the pneumatic loop via pushbuttons and hi/lo pilots to activate the hydraulic system, enabling a shutdown.

The Electronic system uses an electrical pulse which instantly activates the hydraulic system enabling a shutdown, drastically reducing the time of valve closure. Additionally the electronic system can be tied into the rigs own ESD/PSD systems and be easily expanded to include other sensors including high/low level and temperature sensors.

The **activation system** is SIL2 certified, where the **Safety Integrity Level (SIL)** is defined as a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. In simple terms, SIL is a measurement of performance required for a Safety Instrumented Function (SIF).

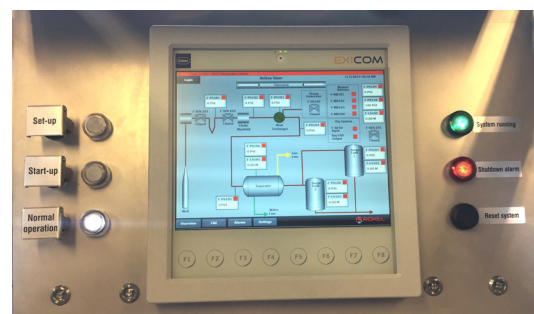


Applications

- Onshore and offshore oil and gas well testing and clean-up operations
- High Pressure, High Temperature operations
- High rate operations
- Deep water operations
- Extended well test operations

Features and benefits

- Industry recognized Siemens software – SIL2 certified
- System configuration for all well test designs
- Zone 1 touchscreen HMI for setup and visual status of sensors, valves and buttons
- Full history system alarm logs
- Modbus output to DAQ system
- Fully programmable, include valve closure delay, cause and effect chart



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Technical specifications		
General	Hazardous area	Zone 1
	Lifting	DNV 2.7-1 integral frame
	Safety integrity level	SIL 2 certified DNV (activation system)
	Button and sensor cabling	Field wiring single pair using standard Bulgin connectors
	Dimensions (L x W x H) inches (mm)	8.43 x 31.50 x 54.53 (976 x 800 x 1,385)
	Weight lbs (kgs)	661 (300)
Inputs	Power	240v AC
	Sensors	10 x Pressure (4-20mA) 4 x Level / temperature (4-20mA)
	Buttons	16 maximum (4 loops of 4) (digital)
	Rig activation	Rig system to activate ESD system (digital)
Outputs	Solenoids	2 x Hydraulic (digital) 2 x Pneumatic (digital)
	Modbus DAQ	Data output to DAQ system
	Modbus rig/ 3rd party	ESD status output

Note: Other sizes, configurations and pressure ratings are available to meet most applications, for more information contact your local Expro representative or email welltesting@expro.com