

LSM



During the process of killing a well, it is the function of the Mud Gas Separator (MGS) to separate gas from the return mud after it has been circulated through the choke manifold. The separated gas is vented to atmosphere through a vent-line and the 'degassed' mud is returned to the mud pits. The mud gas separator has to contend with the surging flow conditions throughout.

These surges can be frequent and violent; especially in the transient period as the gas bubble is circulated from the well. In these circumstances it is possible for the separator to be overloaded and the liquid seal breached. Gas blowing through to the mud pit area then occurs, creating a highly dangerous situation that should be monitored to enhance safety of drilling operations.

The EFC Group LSM continuously compares the internal pressure of the mud gas separator with the hydrostatic pressure at the base of the U Tube/Dip Tube. When the liquid seal is intact, the pressure inside the separator will always be less than the hydrostatic pressure in the U Tube/Dip Tube. If the two pressure readings converge, however, this is a positive indication that the liquid seal is in danger of being breached. By choosing a pre-determined minimum value for this differential pressure, the operator can set an alarm threshold to warn the driller of imminent blow through, allowing remedial action to be taken.

TYPICAL LSM INCLUDES:

- Degasser Sensor, ½" NPT (can be upgraded to 2" ANSI 150# flange)
- Liquid Seal sensor, 2" ANSI 150# flange
- Mud Gas Separator pressure display
- Liquid Seal pressure display
- Differential pressure enhanced Bargraph Seal Integrity warning signals, with green, amber, red visual indication
- Audible & Visual Alarms
- EExd Enclosure with necessary processing circuitry
- Alarm accept pushbutton
- External output, may be used by third party to detect alarm conditions



LSM

EFC GROUP'S FAMILY OF WELL CONTROL INSTRUMENTATION CAN BE PROVIDED AS INDEPENDENT SYSTEMS OR IT ADDS VALUE TO THE CHOKE CONTROL SYSTEM OF ANY RIG.

EFC's LSM offers a differential pressure monitoring system, which continuously compares the internal pressure of the separator with the hydrostatic pressure at the base of the dip tube/U tube. It is compatible with all liquid seal arrangements.

LIQUID SEAL MONITOR	TECHNICAL SPECIFICATION
Overall Size	285mmL X 150mmW X 226mmH (LSM22BG Display)
Overall Weight	20Kg
Zone Rating	Zone 1, 2 & Safe Area
Maximum Working Pressure	150Psi
Temperature Range	-40°C to 70°C
IP Rating	IP66
Documentation Included	Manufactures Data Book (MDB), User Manual (UM) Technical & Certification Manual (T&CM)
Certification	ATEX Certified LED Bargraph and System can be suitable for; NORSOK & IECEx

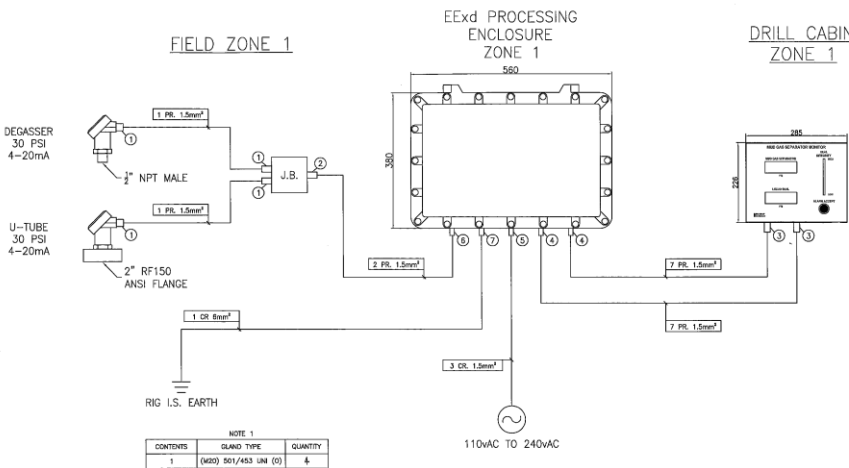
NB: Technical data may be subject to change

FEATURES	BENEFITS
Visual Indicator	Universally recognized traffic light warning LED Bargraph
Pre-set Alarm Height	Alarm will trigger at preset 10ft, or it can be calibrated to suit Rig operations
4 Digit Indicators	Clear pressure displays
Engraved Mimic (Option)	Represents degasser or u-tube for ease of human interface

Expandability

- Integration with Choke Control system
- Compliment High Pressure High Temperature (HPHT) Instrumentation
- Finescale Gauge Set

Typical GA Drawing:



HPHT/0214/004/A