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GAS-PRO

The stand-alone gas in mud detector



Air driven Mud agitator



Sample circuit



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Design

The Gas-Pro stand-alone gas detector is designed to measure gases in mud on drilling rigs, it is a detector and not an analyser. The detector measures all burnable gasses with Pellistor cells, the cells are calibrated with methane. Also hydrogen sulphide is measured with a thin film metal oxide semiconductor (TFMOS) sensor, the sensor is designed to measure and display concentrations of H₂S in the 0-100 ppm range, but will continue to display concentrations up to 120% FSD.

The total Gas-Pro gas detection system consists of an agitator, sample suction circuit, gas detector and an optional alarm unit.

Agitator

The agitator is an air-driven mixer to separate the gas from the mud.

Sample circuit

The sample circuit is used to transport (vacuum pump) the samples from the agitator to the detector. In the suction circuit the samples are conditioned, dewatered, dried and filtered, and a stable constant flow is created by flow reducers. The vacuum pumps, filters and flow reducers are installed in the detector.

Gas detector

In the gas detector the samples are divided in two flows; one for the combustible sensors and one for the hydrogen sulphide sensor. The sensor signals are amplified and connected to a little PLC. In the PLC the signals are calibrated, temperature compensated and linearized. The PLC generates the alarms, analogue outputs and the serial output. A touch display in the front is used to display the readings, change settings and test alarms and outputs.

Optional alarm unit

An optional alarm unit (one or more) can be installed to generate a visual and audible alarm when gas readings exceed the adjustable alarm values.



Technical data

Detection of hydrocarbons in 2 ranges; 0..100%LEL methane by Pellistor catalytic bead sensors, 0..100% VOL methane by Pellistor thermal conductivity sensors. (or IR sensors) Total detection range 0..1.000.000ppm.

Detection of hydrogen sulphide by a thin film metal oxide semiconductor (TFMOS) sensor, detection range 0..100ppm.

Temperature range: -20°C/+50°C (-4°F/122°F)

Enclosure: IP 30 (NEMA 1)

Cable connection: connectors

Weight: 50 kg (110 lb)

Approvals: CE, ATEX

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24 hours a day, 7 days a week.**

Features

- The **GAS-PRO** stand-alone gas in mud detector is especially designed to detect gas on drilling rigs
 - Measurement of hydrocarbon from 0 to 1.000.000 ppm, calibrated in methane
 - Measurement of hydrogen sulphide from 0 to 100 ppm
 - All combustible gasses are detected, readings cross-sensitive to methane
 - Stand-alone gas detection
 - Alarm outputs for burnable and toxic gas, relay contacts
 - Analogue outputs for gas readings, 2x4..20mA
 - Serial output in WITS-format, RS232
 - Adjustable settings for alarm values
 - Manual or auto reset
 - Calibration of sensors possible
 - Local or remote sensors possible
 - Integration in any data acquisition or mudlogging system
- All parts in zones ATEX certified, detector to be placed in non-Ex zone



Maintenance

The **GAS-PRO** stand-alone gas in mud detector needs maintenance, this can be separated in daily maintenance, weekly maintenance and yearly maintenance. Daily maintenance consists of a visual check of the agitator, suction line and gas detector. Weekly maintenance consists of a test of the gas detector with certified test gas and change out filters and driers. Yearly maintenance consists of a complete recalibration and certification of the gas detector.

Electrical connection

Power: 120..240Vac, 50/60Hz, 2..0,8A
Analogue outputs: 4-20 mA
RS 232 Communication
Digital output – volt free contacts, load max: 1A, 240 V ac / 3A, 24Vdc

An Exi Paperless recorder/display can be used as an independent rigfloor display

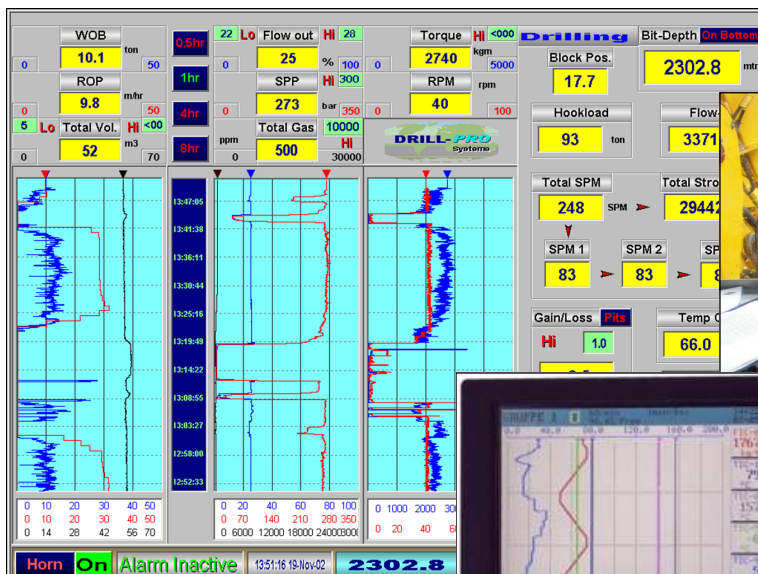
- Combined displays of numerical and graphical channels and horizontal bar graphs
- Alarm settings
- Historical time-based data
- Data export to usb-stick

GAS-PRO data can be integrated in DRILL-PRO "Total Drilling Information System"

- Total-gas & H2S data will be available on all workstations.
- Alarm settings are adjustable on drillers monitor, time-based data-storage in **DRILL-PRO**

Product range

In the **GAS-PRO** product range you can find the following gas detection systems:
Total Gas in mud detection;
Total Gas and H2S in mud detection;
Total Gas ambient detection;
H2S ambient detection;
Wireless H2S ambient detection;
Ambient detection of other gasses like O2, CO, SO2 or H2.



Sensor technology

- %LEL; CC or IR
- %VOL; TC or IR
- H2S; TFMS