H_2-O_2 Purity board

For controlling the level of purity of alternator refrigeration gas

The H_2-O_2 board continuously analyzes the concentration of hydrogen and oxygen in the alternator cooling circuit throughout the production phase and during air release by successives flushes. It accurately detects the appearance of potentially explosive hydrogenated gas mixtures and also eliminates the risk of anorexia by measuring the oxygen level when the circuit is opened. Thus, this equipment contributes to the safeguard of the installations and contributes to the safety of the personnel. The H_2-O_2 board already equips several NPPs.

BENEFITS

> Suitable for hydrogen risk areas (ATEX)

> Speed and high accuracy of measurement

> Easy operation

> Maintenance and performances verification once a year

> Robust physical measurements

NEED

In normal operation, the alternator cooling circuit contains hydrogen which must have a good level of purity.

The operator also checks that the H2-O2 mixture always remains well below the explosive values, including during the circuit maintenance phases.

The measuring means must be able to operate continuously, without intervention and in a hydrogen risk zone.

The oxygen measurement is only used during the transitional phases of rinsing the circuits and venting.

OUR SOLUTION

The H_2-O_2 measurement board is equipped with 2 robust and efficient sensors using a physical measurement principle:

- 1st : a katharometer-type hydrogen sensor
- 2nd : a katharometer + paramagnetic type oxygen sensor

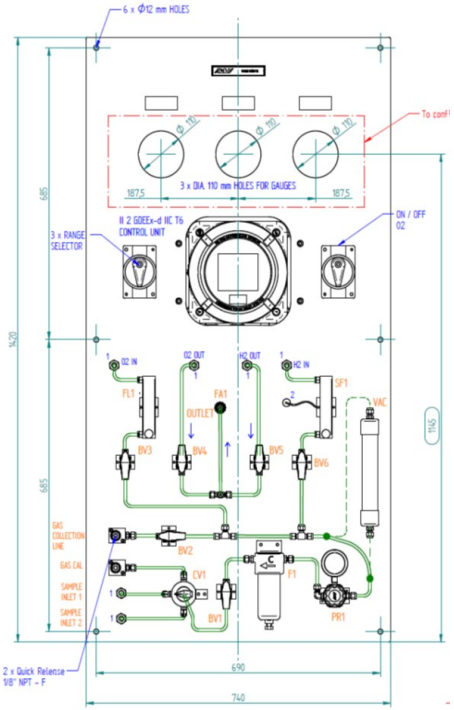
The board is designed to operate in a hydrogen risk zone (Group II 2G Ex-d IIC T6), the transmitter can be mounted directly on the plate or remote.

The turntable incorporates several features allowing safe calibration and sample taking.

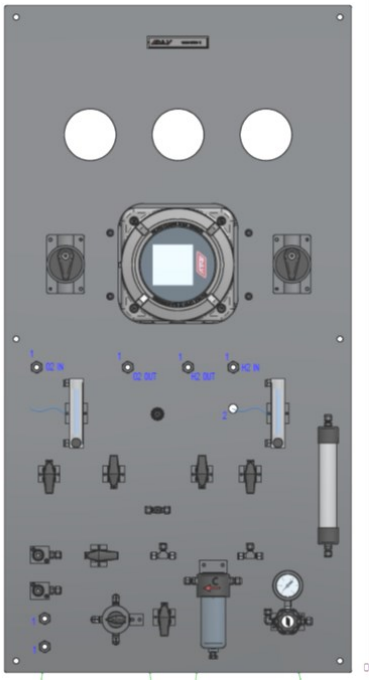
During normal operation (hydrogen level between 100 and 85%) the O2 sensor is isolated from the circuit and automatically shut down.

Several models of plates have been studied in order to adapt to any site configuration.

Non contractual visual. Can be subject to modification.



Example of layout of hydraulic and electrical components on a single board.



TECHNICAL SPECIFICATIONS

Measurement range (other ranges optional)	
Range 1	0-100% Air in N_2 (or CO_2)
Range 2	0-100% H_2 in N_2 (or CO_2)
Range 3	100-85% H_2 in air
Performance	
Margin of error	< 1% full scale
Response time	90% response in less than 1 minute
Derivative	< 1% / week
Environment	
Gas flow	0,25 to 1 NL/min
Gas pressure	30 mbar to 7 bar
Gas temperature	-10°C to 50°C
Ambient	0 to 50°C, HR <90%
Outputs	
2 alarm relays, 1A/250VAC on H_2 or O_2 rate. Low or high alarm	
1 output 4-20 mA proportional rate H_2, load resistor = 500 ohm max	
Power supply	
230 +/- 20 VAC, 50 VA	
Interfaces	
E/S gas : ¼ FNPT	
Standard and sample line : self-sealing quick connectors	
Dimensions and weigh (configurable according to site)	
Dimensions	Narrow board with integrated transmitter : Example : 1420 mm x 740 mm x 420 mm*
Weight	From 80 to 110 kg
Certificates	
ATEX	II 2G Ex d IIC T6

* The board can be designed in 1, 2 or 3 parts.

Options available
Deported IHM
H2 low flow alarm sent to a relay
Isolation valves for sampling lines
Sampling bottle with self-sealing connection

CONTACT

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