

Hydrogen analyzer extended

- Teckso customized analyzer -



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*Ihr Spezialist für innovative
Lösungen in der
Gaschromatographie*

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- Teckso costumized analyzer -

Hydrogen analyzer modular setup

According to the ISO / DIS 14687 15 different parameters should be measured to ensure the quality of the hydrogen gas for PEM fuel cell applications. In order to measure the parameters, different analytical equipment is required for measuring all parameters. Dependent on the production way of hydrogen or the following application some parameters of the DIN should be monitored consequently and some parameters could be controlled randomly which might be done by external laboratories.

As different parameters are important for different costumers we build up the hydrogen analyzer extended with a modular channel setup. Each channel is independent and can detect specific parameters as shown in figure 1. The costumers customize the analyzer and can choose which parameters are monitored constantly with the analyzer.

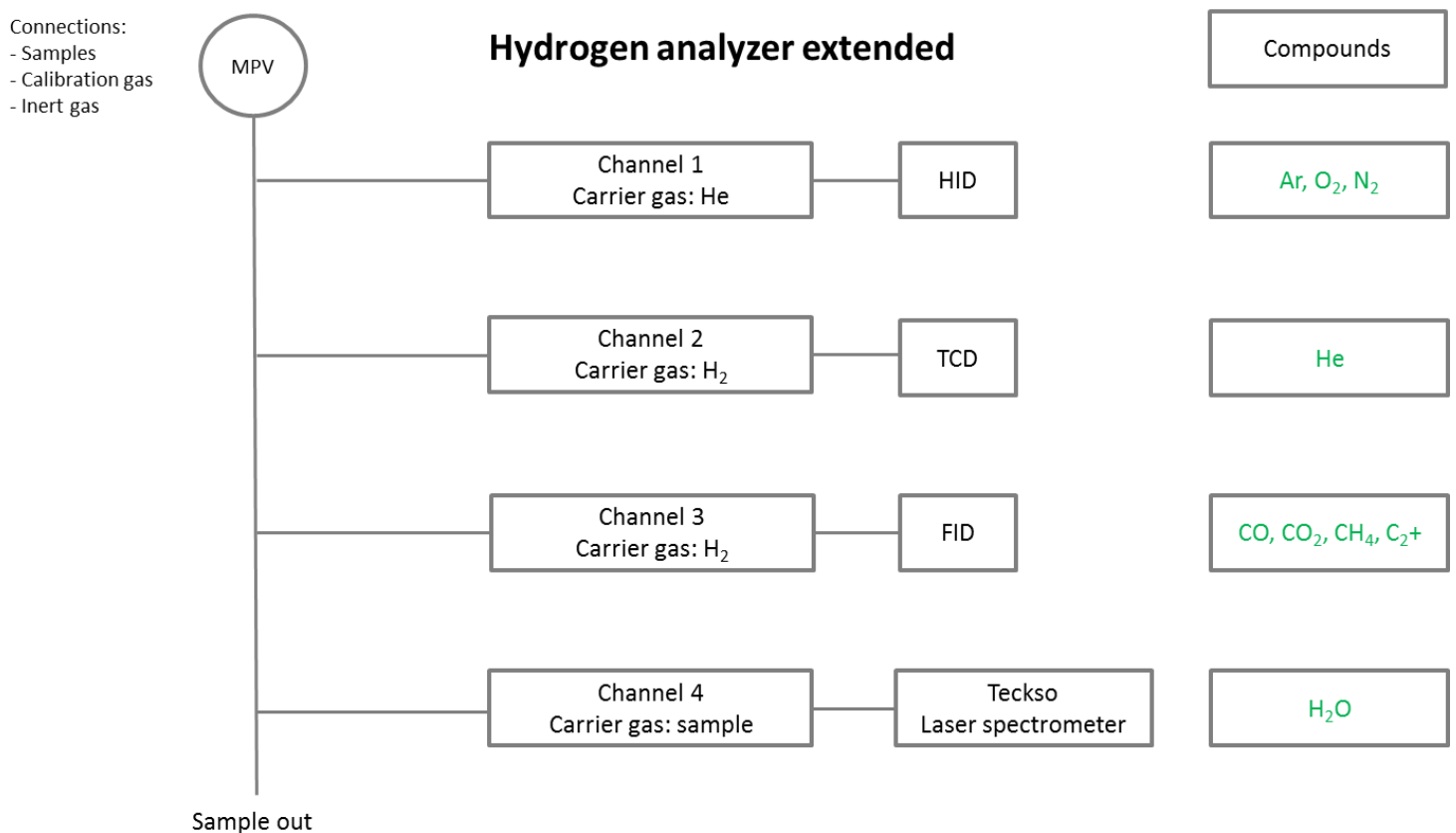


Figure 1: Scheme of the hydrogen analyzer extended with 4 channels.

As shown in figure 1 the 4 channel hydrogen analyzer extended can measure 9 parameters in hydrogen including the permanent gases, hydrocarbons and water. Four different detectors are built in the system in order to preprocess the detection limits for each parameter according to ISO / DIS 14867. In addition on the multiposition valve different sample lines, calibration gases or a purge gas can be connected with the system. The workflow of calibration, flushing and sampling is done fully automatically as well as the data transfer into a profibus or profinet network.

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Further opportunities

If more parameters should be monitored frequently, it is possible to add two more channels with two other detectors in the system.

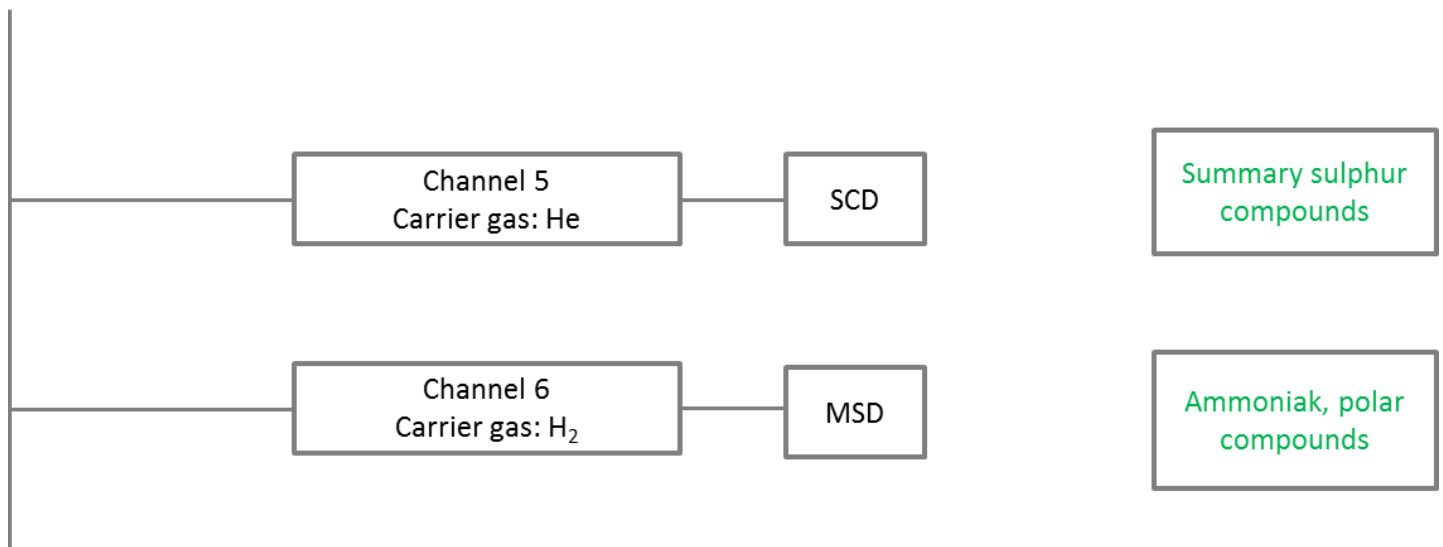


Figure 2: Scheme of further possible channels.

The sulphur chemilumineszenz detector is a highly sensity detector for sulphur compounds and prepossess the low limit of 4 ppb of sulphur compounds. For the other parameters like polar compounds or ammonia a mass spektrometer is essential.

For a quick process control the hydrogen analyzer compact is preferable as this instrument gives results in less than 3 minutes and is much cheaper as the extended version. However, this compact analyzer is not able to measure all parameters and does not reach the low detection limits.