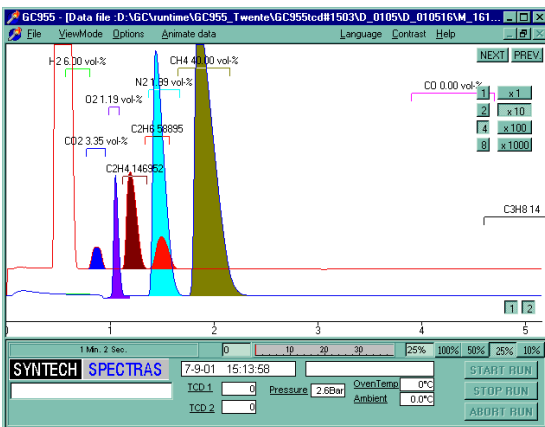
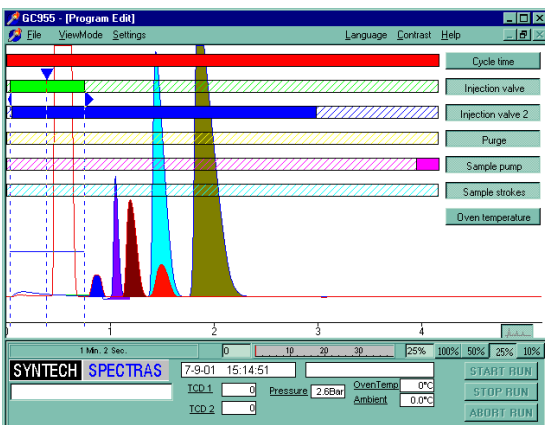


SYNTECH SPECTRAS GC955 PYROLYSIS GAS ANALYSER 112 AND 113



chromatogram of nitrogen, oxygen, ethene, ethane, carbon dioxide and methane



program edit window, with chromatogram in the background to optimise the application

THE SYNTECH SPECTRAS GC955 SERIES 100 BIO GAS / PYROLYSE GAS ANALYSER IS BUILT FOR THE ANALYSIS OF AIR MIXTURES TO CONTROL A BIO GAS REACTOR OR A PYROLYSE GAS PROCESS. THE SYSTEM ANALYSES COMPOUNDS FORMED BY THESE PROCESSES. THE ANALYSER IS NORMALLY USED FOR RESEARCH PURPOSES. WE HAVE SOLD IT TO SEVERAL UNIVERSITIES AND TECHNICAL INSTITUTES ALL OVER THE WORLD WHERE OPTIONS FOR REDUCTION OF CARBON DIOXIDE ARE STUDIED.

HYDROCARBON SELECTION

The selection is adapted to the research project. The light boiling hydrocarbons from methane to propane are normally requested for measuring. Depending on the process used also carbon monoxide, carbon dioxide and hydrogen may have to be measured. Also the measurement of the oxygen and nitrogen rest fraction is important in the biogas formation and pyrolysis process. In most cases only concentrations over 1% are of interest, sometimes the caloric value of the mixture must be calculated and then a greater precision is needed.

Analyser type offered:

The system uses a TCD detector, as single compensated or dual not-compensated mode. The packed columns are selected on the list as given by the customer. In some cases the system is supplied as single column single valve. Most of the time the selection requires a single column set, dual valve, single detector, this is the type 113. In some cases we use a double column set, dual valve, double detector, this is the type 112.

Option one: System 113: O₂, N₂, CO, CO₂, C1: The instrument is a gas chromatograph with two columns, two valves and one TCD-detector. By switching two 10 port valves in an elegant pattern, the different compounds are separated and analysed. Very important is a good management of the column that separates oxygen and nitrogen

Option two: System 112: O₂, N₂, CO, CO₂, C1, C2, C3: The instrument is a gas chromatograph with two stripper columns, two analytical columns and two TCD-detectors. By switching two 10 port valves at individual set times, the different compounds are separated and analysed. The first system analyses up to carbon monoxide, the other system carbon dioxide and the hydrocarbons.

Hydrogen: for the analysis of hydrogen the TCD system runs with higher sensitivity if the carrier gas is nitrogen. But this lowers the sensitivity for the other compounds dramatically. Ask for a separate quote if hydrogen has to be included.

In the GC we use a standard industrial PC running under Windows. This means that the whole PC structure is used to handle also the results of measurements: data are interpreted and saved on the internal hard disk. Data can also be transferred by network and modem connection. It is possible to run the system from a separate PC. The results are calculated as vol % or ppm. The system can be coupled to a stream selector and alarms can be set at different levels.

Simple operations, good reliability, low maintenance cost are important for us.

Option 1 System 113 O₂, N₂, CO, CO₂, C1	Detector: TCD with double valve system. Levels: 0.1% for TCD. Included items: Series 100 , one detector and two valves, Column set: first column Porapak R, second column Molsieves 5A,
Option 2 System 112 O₂, N₂, CO, CO₂, C1, C2, C3	Detector: 2 TCD with double valve system. Levels: 0.1% for TCD. Included items: Series 100 , two detectors and two valves, Column set 1: first column Porapak R, second column Molsieves 5A, Column set 2: both columns Porapak R Temperature 80 °C, cycle time 5 min
reproducibility	typical <3% at 0,5%
consumption of gas	4 bar, 100 ml/min helium, quality 5.0
dimensions	19" rack, 5 standard Height Units, depth 37.2 cm net
power demand	220 V AC, 250 VA (110 V AC available)
included hardware	computer Pentium III class, hard disk ≥200Gb, 2.5 ",display LCD 10.4 " colour, touchscreen, various data connection options
included software	Windows XPe, control of instrument: direct control via keyboard or mouse, or via remote host (RS232 / modem), ethernet, data exchange protocols available on demand
Stream selector	4 to 16 stream options available, with a sample pump of 5 l/min, control and data handling by the GC955. Sequence can be individualised, alarm levels can be set for each stream.