

SCU

SYNSPEC SAMPLE CONDITIONING UNIT WITH OPTIONAL PERMEATION OVEN



GC955—part one
GC955—part two
Sample Conditioning Unit
zero-air generator
N₂ and H₂ generator

IMPROVE THE RESULTS OF AMBIENT AIR MONITORING WITH A GOOD SAMPLE CONDITIONING UNIT

Ambient air contains hydrocarbons that can be analysed continuously with a Synspec Gas Chromatograph (GC). The sample condition is important: dust and humidity should be reduced to levels that are acceptable for the GC. In some cases this implies that the air must be dried, for other hydrocarbons this is not advised.

Calibration gases must also be provided to the system. An automatic switch is a good option. Calibration gases can be provided from bottles and for a span check a permeation device is a good option.

Synspec provides a sample conditioning unit that contains these functions in a practical 3 HU box.



Option 1: Perma pure dryer

MODULE 1: SAMPLE DRYER AND SWITCH BETWEEN SAMPLE, SPAN AND ZERO GAS

For the application with the GC955-800 series, where a cooled preconcentration trap is implemented, water condensation is a potential problem.

The Nafion™ based dryers from Perma Pure are able to remove the water without removing the majority of the hydrocarbons. In the sample conditioning unit, the humidity of the sample gas after passing the Nafion™ dryer is monitored continuously. If the humidity is higher than the chosen upper limit, an alarm will be generated to the gas chromatograph. With double GC-systems such as the GC955-611/811, optionally only one stream can be dried.

This dryer is combined with a switch between sample, span and zero.



Option 2: permeation oven

MODULE 2: PERMEATION OVEN AND SWITCH BETWEEN SAMPLE, SPAN AND ZERO GAS

Calibration gases with complex hydrocarbon mixtures are generally expensive. Though, the performance of the Synspec GC can be validated by checking the response on a selection of the components, e.g. one to five components.

The SCU can be supplied with a small permeation oven at one temperature, regulated within 0,1 °C. A constant gas flow is directed through the oven continuously as a standard, completely separated from the normal gas flow. This flow can be connected to the span inlet or the sample inlet.

By leading the overflow out of the cabin interference with the measurement can be easily avoided, for this we advise to place a small carbon filter trap in the line.

SYNTECH SPECTRAS SAMPLE CONDITIONING UNIT

ROOM CONDITIONS

Temperature 5 to 45 °C, humidity 5%– 90% (non condensing).
If Perma Pure dryer is used max temperature 30 °C.

GAS PRESSURES AND FLOWS

Inlet pressure **zero air**: 2,5 bar, flow for zero at calibration 150 ml/min, flow for Perma Pure 250 ml/min
Inlet pressure **span gas**: either at ambient pressure, then overflow outlet, flow at 150 ml/min. Or at 1 bar, without overflow, maximum flow 50 ml/min.
Optionally **Tedlar bag** can be connected to span inlet.

MODULE 1: DRYER

24" Perma Pure dryer, lifetime 1–2 years

MODULE 2: PERMEATION OVEN

Oven at 40 °C, connect to zero air or optional connect with internal carbon scrubber.
1 permeation tube can be installed, with a maximum length of 5 cm

GAS CONNECTIONS

Swagelock SS 1/8 "connectors, connect with FEP or SS tubing

HUMIDITY SENSOR

Range 5% to 95%

ELECTRICAL CONNECTIONS

110 up to 240 VA, <100 W

COMMUNICATION

USB connection, alarm signals for pressure of zero air, Relative Humidity at outlet of Perma Pure dryer, temperature of Permeation oven.

DIMENSIONS

19" rack, (W 48,3 cm) 3 standard Height Units, (high 13,9 cm) , 37 cm deep
Weight 6 kg

