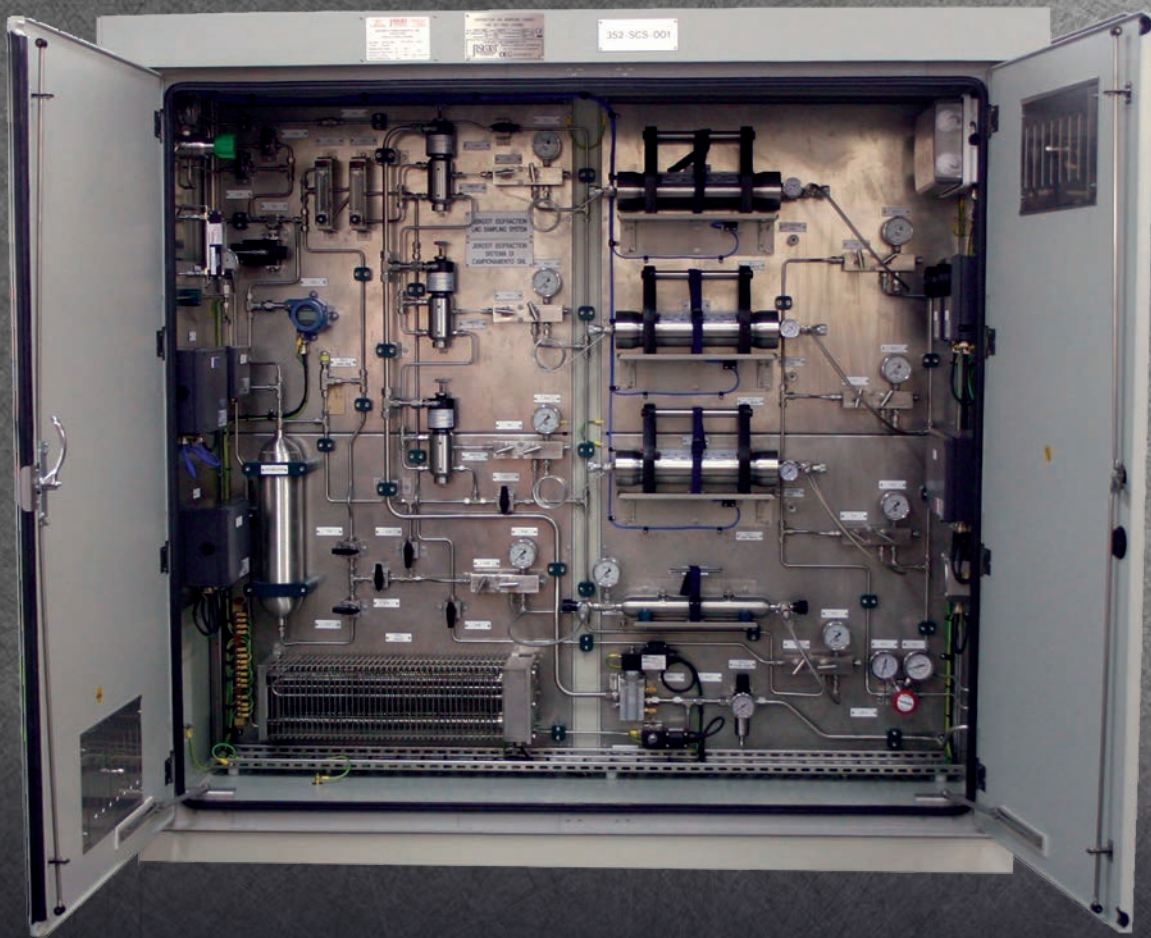


+ JISKOOT IsoFraction Sampling System

**Automatic sampling system
for LNG applications**



BENEFITS

- + ISO8943 (2007) compliant
- + Accuracy higher than $\pm 0.15\%$
- + Insensitive to pressure changes
- + Fully automated system
- + No manual setup
- + Compact system

The Sensia JISKOOT* IsoFraction* automatic sampling system for LNG applications was developed to overcome the complications associated with traditional LNG sampling and GC feed systems.

Low uncertainty

Operators report a significant improvement in uncertainty achieved which is typically higher than $\pm 0.15\%$.

Unaffected by pressure and flow rate

The IsoFraction system is designed to be unaffected by changes in line pressure or flow rate.

Fully automatic

The system does not need any operator set up or intervention, minimizing the risk of operator induced errors.

Representative samples

Cameron uses its grab sampler and constant pressure cylinder (CPC) technology to produce representative samples suitable for custody transfer.

Full integration with gas chromatographs

The system can be used to supply any online GC device with a representative feed.

System reliability and simplicity

Sensia has used its process solving approach to produce a reliable and robust system that has low maintenance and installation costs.

System overview

The IsoFraction LNG sampling system comprises a gas sampling system with an integrated vaporization, stabilization, and control system to ensure control of the phase change of the LNG to gas with minimal lag.

The system includes take-off points to enable validation and control process for representivity of GC feed.

Once LNG has been vaporized it is maintained above the dew point of the component fractions. It then flows through a conventional gas sampler where gas samples are extracted into a fixed pressure (variable volume piston) sample collection receiver (CPC).

This sampling process provides improvements over conventional methods due to the high volume of gas flowing through the system, which ensures representivity of the gas both sampled, and fed to a GC.

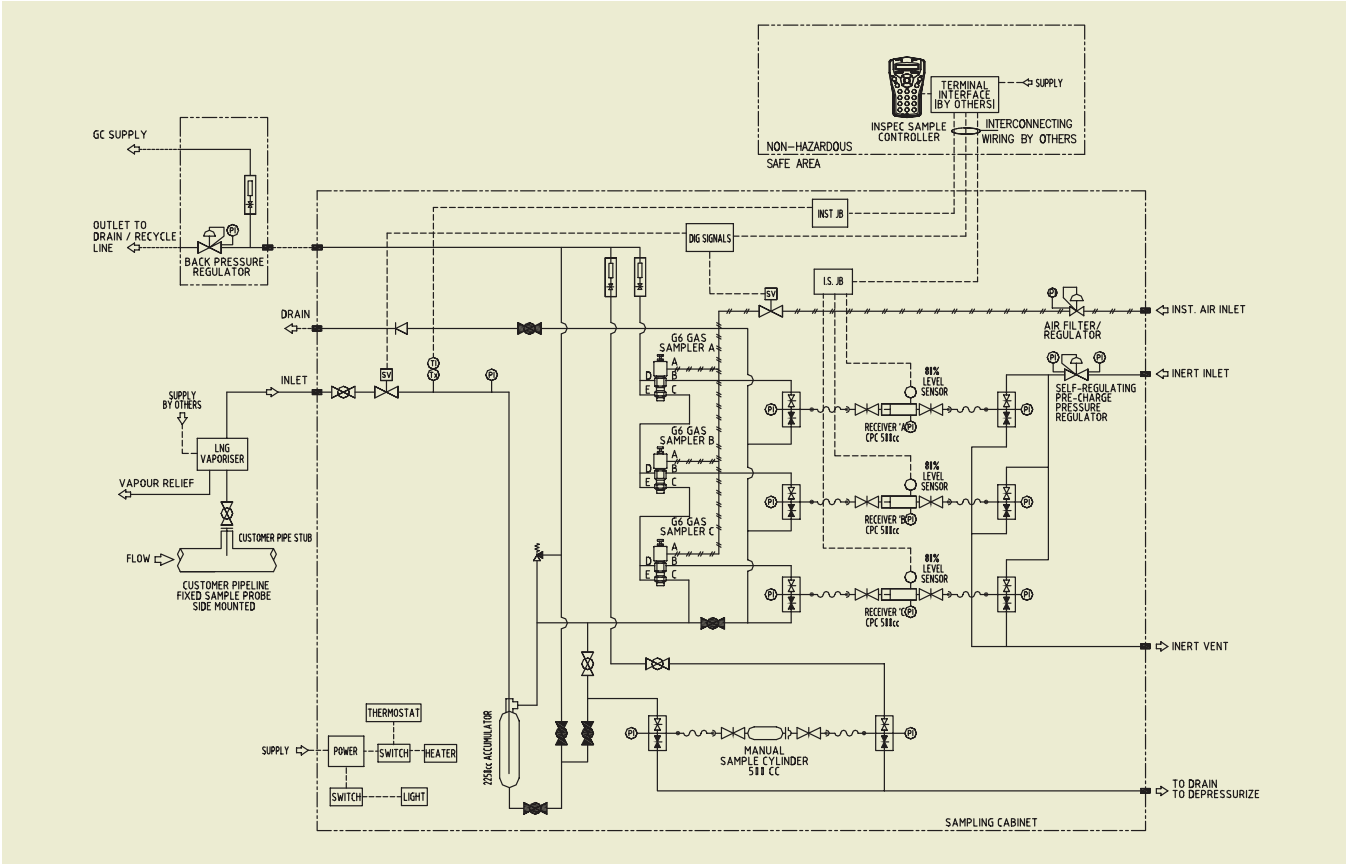
The LNG sampling system will normally employ three gas samplers tied into a single process loop to allow three independent but comparable samples to be taken.

In addition, a provision is made to allow the extraction of fixed volume samples to conventional 500 ml receivers at key intervals (25 /50 /75 /100%) of the batch.

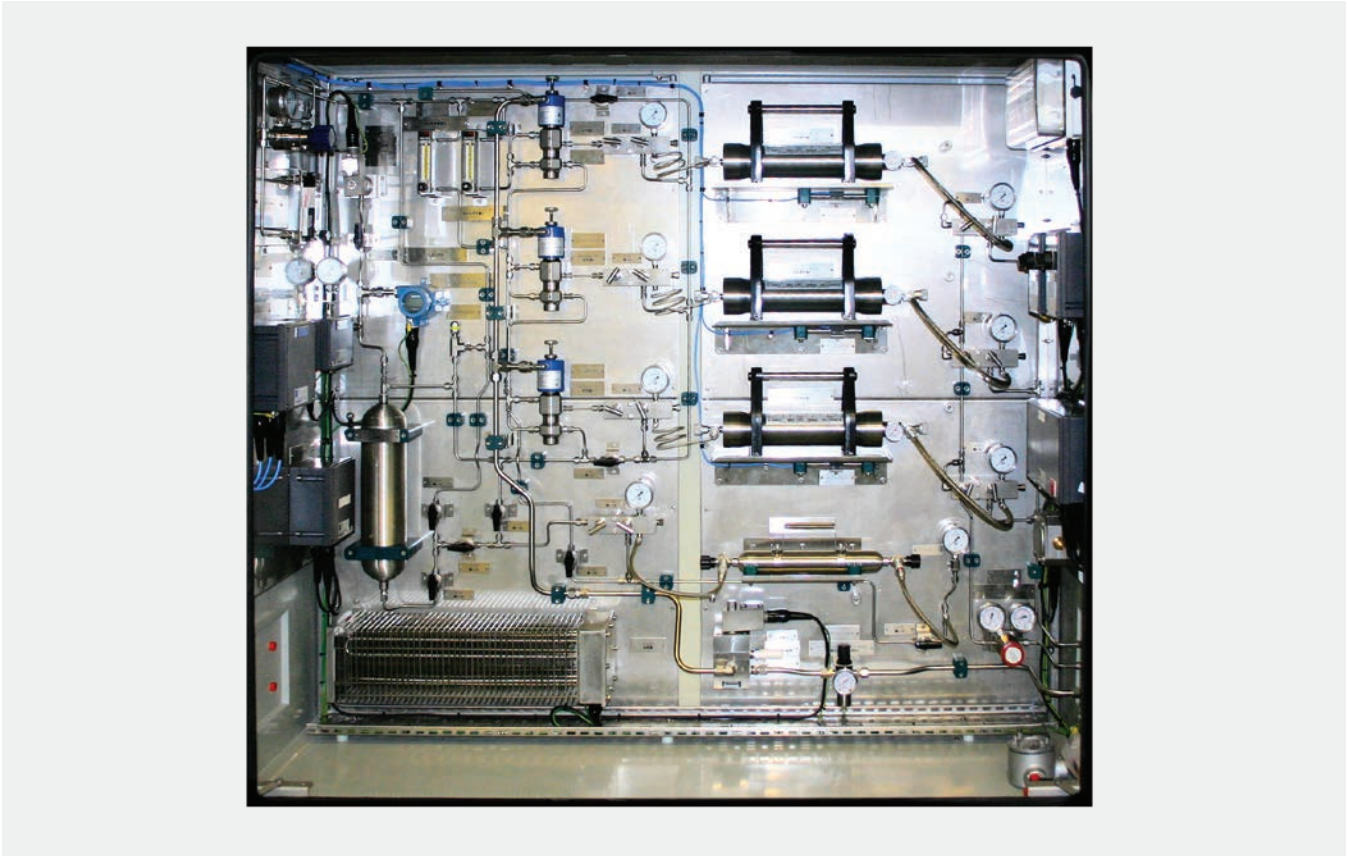
These are spot samples and require the vessels to be purged to ensure representivity of a specific point in the batch.

The LNG sampling system is designed to enable pre-purging to estimate containments to the sampling process.

Three samples are taken and held in the constant pressure sample receivers (CPC). The use of fixed pressure receivers allows minimal atmospheric or cross batch contamination and a large number of small samples to maximize batch representivity.



Typical systems schematic.



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