

Membrane Separators for Biogas Upgrading

High-Purity Biomethane, Novel Designs

Background

The growing transition from traditional CHP processes to biogas upgrading has led to an increased demand for membrane separation technology. Membranes are an excellent choice for the separation of CH₄ and CO₂ to generate a high-purity, renewable natural gas stream that can be used in place of traditional, less renewable sources. By using biomethane instead of standard fossil fuels, the carbon impact is reduced significantly, thereby reducing harmful emissions. Air Products Membrane Solutions considers biogas upgrading to be a core area of focus, and as a global technology leader in gas separation, is committed to developing innovative new solutions for the application of membranes in the biogas market.

Design

Air Products Membrane Solutions has designed a proprietary biogas upgrading membrane configuration that involves a feed gas compressor working with four membrane stages, utilizing a sweep stream from one membrane stage to enhance the performance of another membrane stage. With this membrane configuration, CH₄ product purities of greater than 97 mol% can be achieved, while also delivering high CH₄ recoveries of >99%. This combination of high product yield and near 100% recovery makes the configuration an excellent biogas upgrading solution for biogas sources such as landfills, anaerobic digesters, and more.

Conclusion

Air Products Membrane Solutions has developed a proprietary new design that allows for increased yield and higher CH₄ recovery during the biogas upgrading process, without sacrificing quality or cost. For more information on how Air Products can improve your biogas upgrading operations, contact us.



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