



11 May 2023

Emerson Pressure Management, Automation Solutions

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McKinney, TX 75070, USA (PRM Global Headquarters)

Subject: *Emerson Regulator Products' Compatibility Statement for Natural Gas/Hydrogen Blending in Natural Gas Transmission and Distribution Infrastructures*

Emerson pressure regulating products have been tried and tested in a variety of hydrogen applications over the last 60+ years. With hydrogen blending becoming an integral part of the global energy evolution roadmap, we are committed to supporting our customers' need to ensure safe and reliable progression of their critical infrastructure upgrading projects.

Based on available knowledge^{1&2}, and Emerson's vast experience with hydrogen, products for gas infrastructure listed below are suitable for the determined conditions. The product's inlet and pressure ratings have not changed, and they should not be used above those ratings. This list represents a work in progress and will be expanded as further testing and verification is completed (see [Emerson.com/NGDecarbonization](https://www.emerson.com/NGDecarbonization) for research and testing methodology followed).

Hydrogen/Natural gas blends up to 10% Hydrogen by volume

1098-EGR	310A	627	63EG	A/140
B/240	CS400	CS800	CSB400	CSB600
CSB700	FA/FAG Series	HSR	M Series (up to 16 bar)	R/25
R/70	R/72	V Series	BLE/BLX	

The following product families have gone through a material evaluation process and **specific constructions have been approved for use in 25% Hydrogen by volume**. Please contact your Emerson Sales Partner for more information.

Hydrogen/Natural gas blends up to 25% Hydrogen by volume

BM5	BM6X	Cronos	EZH/EZHSO	OSE/OSX	FL/FL-BP
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The following product families have gone through a material evaluation process and **specific constructions have been approved for use in 100% Hydrogen service with material upgrades**. Please contact your Emerson Sales Partner for more information.

Hydrogen/Natural gas blends up to 100% Hydrogen by volume

1098-EGR	1301	310A	627	63EG
67CF/67CFS	BM5	BM6X	FL/FL-BP	CSB400
CSB600	CSB700	EZH/EZHSO	MR95/98	OSE/OSX
T205/T205B	T208	Y692/Y693	V Series	

These approvals only apply to products identified above that are produced subsequent to this communication.

¹ MARCOGAZ document 01-10-2019 - TF_H2-427 "OVERVIEW OF AVAILABLE TEST RESULTS AND REGULATORY LIMITS FOR HYDROGEN ADMISSION INTO EXISTING NATURAL GAS INFRASTRUCTURE AND END USE"

² CEN/TR 17797:2022 - Gas infrastructure - Consequences of hydrogen in the gas infrastructure and identification of related standardisation need in the scope of CEN/TC 234

A full review of equipment and materials in natural gas infrastructure is still in-progress at Emerson Global, North American, and European technical committee level; key technical issues to be addressed concerning Emerson regulator products in Hydrogen/NG blended applications are:

- Requirements for external leakage rates and breather/vent openings/internal relief valves (IRVs) (ref.: explosion risk assessment)
- Requirements for internal leakage (ref.: functional performances)
- Legacy material suitability (metallic and non-metallic) including permeation of gaskets, diaphragms, and o-rings
- Alternate options need to be considered for grey cast iron in wetted parts and music wire & SS302/SS303 springs

Consideration should also be given to pressure (total and partial pressure), temperature, gas contaminants and Hydrogen/NG blends composition in the referenced application. All Emerson pressure regulators and relief valves are tested for bubble tight shut off meeting ANSI/FCI 70-3 Class VIII or better before leaving the factory.

Certificate/Declaration of Suitability and updated product data-sheets will be issued as soon as official standard and/or reliable reference is available for equipment to be used with Hydrogen/NG blends in gas distribution networks.

Technical Support

Our technical support team (Business Development Managers, Regional Managers, Application Engineers, Product Managers, and Product Engineering) is committed to supporting customers through this transition. Besides our years of hydrogen industry experience, we have invested in expert engineering talent, upgraded our lab facilities with state-of-the-art test equipment, and developed 3D printing capabilities to support rapid prototyping, all to be able to provide customers with accurate, timely, and thoroughly tested recommendations.

Resources

In addition, we want to remind you of some resources readily available to address frequently asked maintenance questions and product training. Please visit the links below for more information.

[Application Guide – Solutions for Natural Gas \(download\)](#)

[Product maintenance videos are available on the Regulators YouTube Page](#)


[Product Brochures, Instruction Manuals, Data Sheets and Product Bulletins Online](#)

[Natural Gas Decarbonization Webpage](#)

Best Regards,



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