

# HONEYWELL HYDROGEN GRID ENTRY SYSTEM

With an installed base of thousands of fiscal metering systems of which over 300 grid injection systems for Biomethane, Honeywell metering systems and grid injection systems in particular, have proven to be a reliable solution for connecting renewable gases with natural gas grids.



Using Honeywell standardized grid injection solutions you will maximize your return of investment and fast-track into decarbonization of your operations as well as those of your customers.

## INJECT CONFIDENCE INTO YOUR GRID

Honeywell is the only provider of standardized solutions for renewables injection into gas grids that can offer a complete portfolio of metering equipment, gas quality analyzers, control systems, remote monitoring capabilities and a full portfolio of aftersales services and lifecycle support. Honeywell's hydrogen grid entry solution is a fully pre-designed, pre-packed solution that will accommodate safe and reliable injection of Hydrogen in natural gas pipeline systems.

## SYSTEM DESIGN

The grid injection system is designed to inject hydrogen into distribution as well as transportation gas grids. The system is designed to operate continuously and is packed in standard sea-containers for easy transport and fast deployment into the field. The system exists of the following functional parts:

- Hydrogen pressure reduction (if required) Bring projects online faster and with less risk
- Hydrogen flow metering line
- Flow control system controlling the hydrogen flow
- Fast Gas Quality Measurement system of incoming natural gas
- Static blender for comingling of Hydrogen and Natural gas
- Gas quality measurement of blended gas
- Fire and gas detection
- Flow computer system
- Metering and blending Control systems including RTU / Telemetry
- Cyber Secure Remote monitoring system

## VALUE-ADD, THROUGH STANDARDIZED DESIGN

By using standard solutions from Honeywell that build on a solid history of injecting renewable gases in natural gas grids, you will be ensured of a design based on a proven track record of over 300 grid injection sites with many comparable system requirements and characteristics like:

## FEATURES AND BENEFITS



### REDUCED COST

- Standardized design leads to lowest CAPEX investment
- Using mainly Honeywell Equipment leads to reduced integration cost



### IMPROVED RELIABILITY

- Replication leads to design optimization
- Accurate blending control through ratio flow blending combined with gas quality analysis control loops



### LOCAL SUPPORT

- Honeywell's Global presence guarantees fast response times and FAT and SAT capabilities around the globe
- Peace of mind with Honeywell's assurance 360 contracts
- Choice of various service levels as per customer need, Total Care Lite



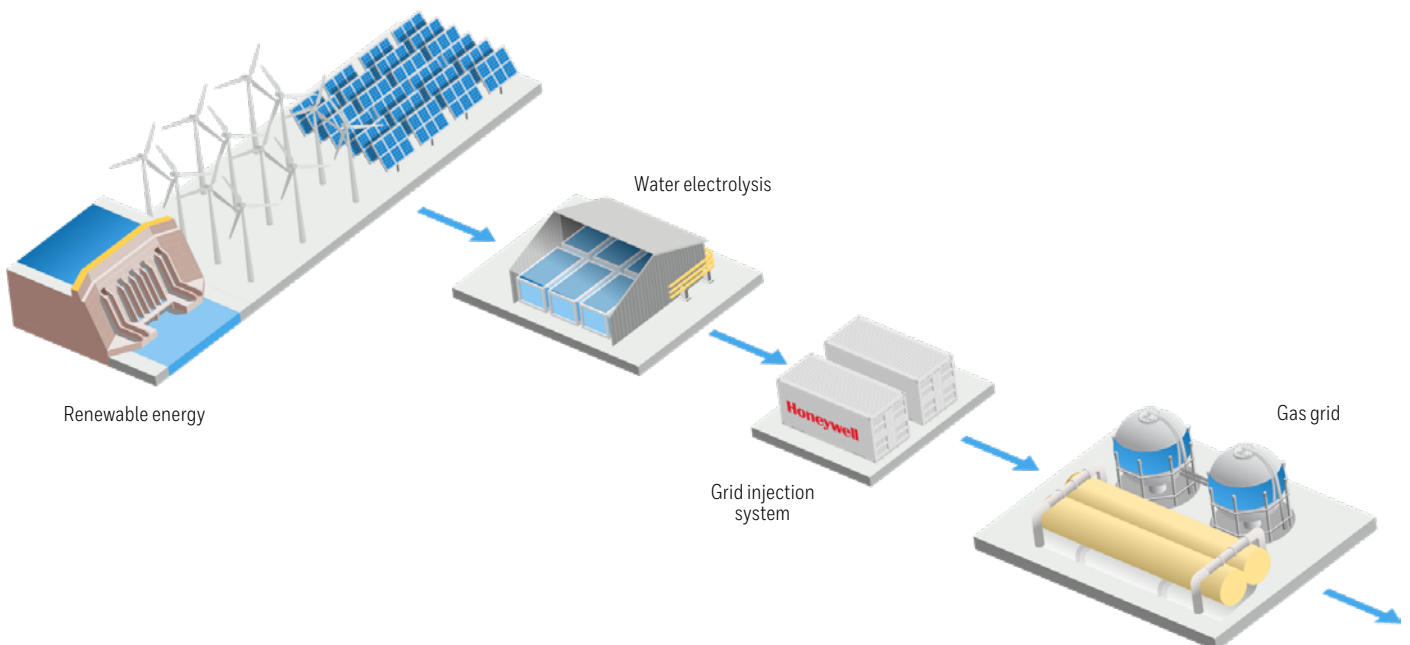
### REMOTE MONITORING

- Remote support and troubleshooting to cut travel costs with fewer site visits
- Improved visibility and health monitoring for more efficient servicing and maintenance
- Supports predictive maintenance programs to reduce failures
- Optimize services and workforce allocations



### SHORTER PROJECT DELIVERY

- Pre-engineered design in containerized form reduces lead times
- Faster installation with turn-key solution



## SPECIFICATIONS

TYPE	BASIC	A1	B1	B2	B3	C1	C2
<b>Hydrogen Supply</b>							
Capacity (Nm <sup>3</sup> /hr)	200-1000	800-2000	200-1000	800-2000	2000-20000	200-1000	800-2000
Pressure (barg)	19	19	200	200	200	200	200
Temperature (°C)	-10 to +60						
Composition/Purity	99,99%						
<b>Natural Gas</b>							
Capacity (Nm <sup>3</sup> /hr)	1600-8000	6600-16000	1600-8000	6600-16000	16000-160000	1600-8000	6600-16000
Pressure (barg)	14.7	14.7	100	100	100	14.7	14.7
Temperature (°C)	-10 to +60						
<b>Blending specifications</b>							
Blend ratio	0 to 30%						
Blend Accuracy	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%
<b>Main Instruments</b>							
High Speed Calory meter	GasLab Q2						
Natural gas	Wobbe Index, Hv, density; Response time <10 sec.						
Gas chromatograph	EnCal 3000 - E Gas						
Blended gas	H <sub>2</sub> ,N <sub>2</sub> , O <sub>2</sub> , CH <sub>2</sub> ; Cycle time: ~1 minutes						
Hydrogen flow meter	Type: Coriolis, 1% measurement accuracy on mass flow						
Natural gas flow meter	UMF/Turbine	UMF/Turbine	Turbine	Turbine	UMF/Turbine	UMF/Turbine	UMF/Turbine
Pressure control	Optional						
Flow controller	Control Edge PLC						
Valves	Manual Ball Valve, Electric Acurated Ball Valves, Electric Actuated Globe Control Valve						
<b>Piping specs, Applied</b>							
Hydrogen section	EN12279 / EN12186 / ASME B 31.3 / ASME B 31.8						
Natural gas/blend section	EN12279 / EN12186 / ASME B31.3 / ASME B 31.8						
<b>Others</b>							
PED (if required), ATEX (all devices approved to be used in IIC)							
<b>Housing - Skid</b>							
<b>Housing - Analyzer and Control System</b>							
	Container B	Container C	Container B	Container B	Outdoor Container A	Container B	Container C
<b>Dimensions</b>							
Container type A	10 ft container Exterior dimension 3,05m Length 2,44m Width 2,62m Height						
Container type B	20 ft container Exterior dimension 6,1m Length 2,44m Width 2,62m Height						
Container type C	40 ft container Exterior dimension 12,2m Length 2,44m Width 2,62m Height						

### For more information

To learn more about our offering, visit [process.honeywell.com](https://process.honeywell.com) or contact your Honeywell Account Manager.

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