

# TrailerfillCNG

by  **Clean Energy**<sup>®</sup>



## **ULTRA-HIGH FLOW SYSTEM OPTIMIZED TO KEEP GAS MOVING**

TrailerfillCNG is engineered to support multiple trailer types from one mother station and provide user-friendly filling as high as 5000 SCFM (1630 Nm<sup>3</sup>/h).

## **PROVEN SCALABILITY**

These components have proven scalability to provide a range of requirements with current systems installed achieving capacities of up to 14,000 Nm<sup>3</sup>/hr (8700 psig).

## **SUPPORTS COST-EFFECTIVE CNG-BASED NATURAL GAS DELIVERY FOR RANGES UP TO 500KM BEYOND THE PIPELINE**

Clean Energy Compression's Fullfill and MaxOffload technology provide quick and complete fueling both at source location and destination.

TrailerfillCNG delivers proven high-capacity fast-filling for industrial gas loading. Proven performance with fill rates as high as 5000 scfm ensure trailers are filled completely and quickly on the road again. Successful and profitable virtual pipeline operation means fast filling, simple, safe operation, and total system oversight from the remote operations center.



# TrailerfillCNG Advantages

- High flow rates decrease trailer filling time allowing you to transport more gas. Products available for 3500 and 5000 scfm.
- Quick and easy connection and disconnection of hoses. Hoses include internal check valve to immediately stop the flow of any gas upon disconnection
- Each TrailerfillCNG is expandable from 1 to 3 hoses, depending on the flow rates and filling requirements.
- Accurate flow measurement for monitoring and administering charges (less than 0.5% error).
- Filtration ensures maximum uptime and elimination of damaging gas stream contaminants. Inlet filtration system protects the flow meters, valves, and all internal components from any debris that may be in the system or gas stream.
- Additional gas cooling capabilities with internal back pressure regulators increase the fill efficiency of the trailers. Includes Smart Active Cooling Control Algorithm (SACCA) to eliminate over cooling the gas at low pressures and to bypass the regulators with free flow gas at end of fill to maximize filling.
- Time-saving operator filling interface. HMI and PLC included for local control of the device by the fueling operator.
- PLC with additional internal sensors allows diagnostics, data logging and reporting of all fueling data to the main control room. This data can be used for virtual pipeline statistics and operational metrics.
- Smart control system with sensors ensures accurate flow measurements and control conditions, monitoring the fueling process, detecting abnormal conditions and automatically shutting the fueling process down if the situation requires it.
- Multiple virtual pipeline delivery routes and trailer configurations can be served automatically from one TrailerfillCNG mother station.
- Active flow control during fuel process start-up to eliminate damage to components and saturation of flow reading devices from large inrush of gas.
- Each hose includes a swivel connection to the TrailerfillCNG eliminating the safety concerns caused by hose twisting and movement during the start and finish of the loading process.

## Features & Benefits

### THE DUAL INLET FREE FLOW EXPANSION MODULE

- Dual inlets for low pressure site connection and high pressure compressor gas connections.
- Smart Active control to free flow site gas into the TrailerfillCNG and into the trailer upon the start of the fueling process.
- No compressors, and no cooling (chillers, etc.) required during the free flow stage.
- The entire process and switch over is fully automatically controlled. No manual operator interaction or control required.
- Module sensors tie into the TrailerfillCNG PLC and control system, through one simple electrical cable connection.
- This module can significantly decrease operation costs to fill the trailers as the site piping pressure energy is harnessed as a “free” energy source to push gas into the trailers.
- Standard and low temperature models available.

### SAFETY

- **Spring loaded manual ball valve for venting of the hoses after a complete fueling process.** The spring loaded valve ensures that the vent valve is never left in the open position which is a safety concern when the next fueling process is started.
- **Three Indicator lights** and alarms provide clear status readings.
- **Enclosure and stand designed for industrial outdoor environments.** Designed for and withstand low temperatures and high wind environments.
- **Start, Stop and ESD buttons** included to allow simple operator control of the TrailerfillCNG without use of touch screens.

## OPTIONS

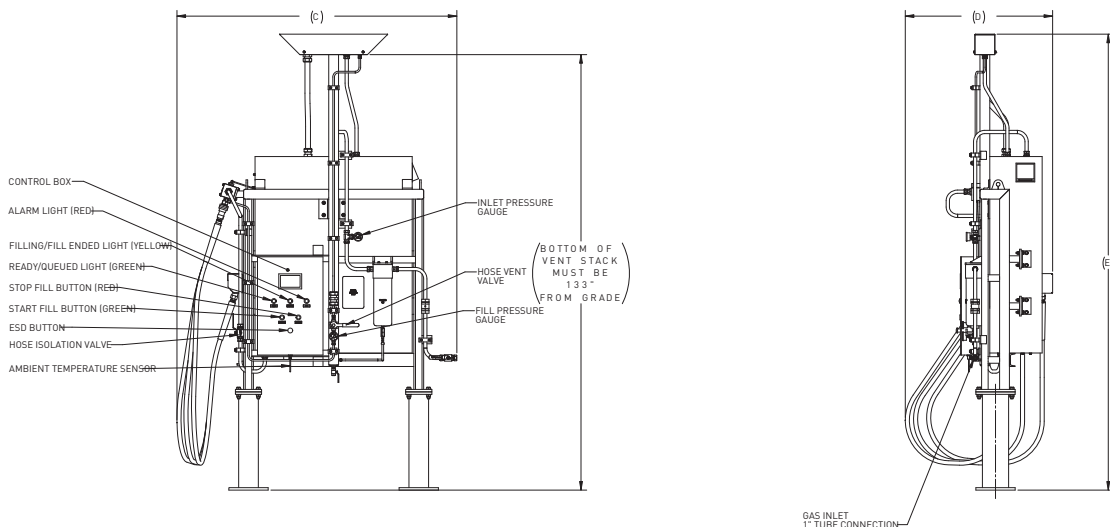
- Standard 3500 scfm, high flow 5000 scfm models
- Inlet Filtrations (always recommended but may be removed if site has other means of filtration to ensure clean gas stream)
- HMI recommended but not required. . Units will still include start, stop, and ESD button along with three status lights.
- Active Cooling (back pressure regulators) along with the Smart Active Cooling Algorithm (SACA) ball valves can be removed if additional cooling and maximum fueling efficiency is not required.
- Flow meters can be removed if additional means of measuring flow during fueling event is provided on site.=
- Standard ambient and gas temperature model versus the low temperature model

## TECHNICAL

<b>MEDIUM</b>	SWEET, DRY NATURAL GAS	
<b>MAXIMUM ALLOWABLE HEAVY HYDROCARBON DEWPOINT</b>	-40°C (-40°F)	
<b>MAXIMUM ALLOWABLE GAS OIL CONTENT</b>	5 PPM	
<b>RECOMMENDED GAS DRYNESS</b>	<4 LBS H2O/MMSCF	
<b>DESIGN AMBIENT TEMPERATURE</b>	-40-65°C (-40-150°F)	
<b>DESIGN PIPING PRESSURE</b>	325 BAR (5000 PSIG)	
<b>MINIMUM GAS INLET TEMPERATURE</b>	-40°C (-40°F)	
<b>FILLING PRESSURE</b>	250 BAR (3625 PSIG) TEMPERATURE COMPENSATED TO 15°C	
<b>GAS OUTLET TEMPERATURE RANGE</b>	-40-50°C (-40-120°F)	
<b>DESIGN FLOW RATE</b>	SCFM	3600, 5000
	NM <sup>3</sup> /H	5800, 8000
<b>ELECTRICAL POWER SUPPLY</b>	50HZ COUNTRIES	380-400 VAC   120/200V
	60HZ COUNTRIES	380-400/460-480/575-600 VAC   120/200V
<b>CONTROL VOLTAGE</b>	24VDC	
<b>GAS INLET CONNECTIONS</b>	1" COMPRESSION FITTING	
<b>GAS OUTLET CONNECTION</b>	QUICK-CONNECT FUELLING CONNECTION	
<b>HOSE OPTIONS</b>	1, 2, OR 3 PARALLEL FILL HOSES	
<b>DIMENSIONS</b>	86" W X 45" D X 140" H (2180MM X 1140MM X 3560MM)	
<b>APPROXIMATE WEIGHT</b>	600 KG (1300 LBS)	
<b>ELECTRICAL CLASSIFICATION</b>	CLASS 1 DIVISION 1 INSIDE CABINET	
<b>CODE COMPLIANCE</b>	NFPA 52/70, ASME B31.3, CE	

### OPTIONS

ON-BOARD FLOW MEASUREMENT  
 HIGH FILL EFFICIENCY WITH SMART ACTIVE COOLING CONTROL ALGORITHM  
 COLD-WEATHER PACKAGE (BELOW -20°F AMBIENT)  
 GROUND MOUNTING OR CAISSON MOUNTING/INLINE HOSE BREAKAWAYS REMOVED  
 (REQUIRES CUSTOMER SUPPLIED SAFETY MEASURES TO BE IMPLEMENTED INSTEAD)  
 INTEGRAL HMI



# CLEAN ENERGY COMPRESSION PRODUCTS

## COMPRESSION

CleanCNG™

CleanCNG-C

UnpluggedCNG

CompleteCNG™

## PRESSURE REDUCTION

CleanPRS

CompletePRS

MobilePRS

## DISPENSING

TimefillCNG

TrailerfillCNG

TrailerdecantCNG

## HIGH EFFICIENCY VIRTUAL PIPELINE

OffgridCNG

## PROJECT MANAGEMENT

Clean Energy Compression has a dedicated Program Management office that oversees projects in all phases; including initiation, planning execution, monitoring, control, and completion. All projects include a project charter, stakeholder register, responsibility assigned matrices, and project schedule.

## MANUFACTURING

A global leader in manufacturing CNG fueling systems, Clean Energy Compression meets all ISO 9001:2008 Quality Management System Safety and Environmental protocols. Clean Energy Compression offers complete CNG fueling systems that are tested in house with Natural Gas and don't leave the factory until they are 100% certified field-ready.

## SERVICE

All Clean Energy Compression projects are supported by a global service network. Customer Care representatives closely monitor performance of units in the field in real-time 24/7. A global network of parts and service providers are available for first-class support on all products.



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