Optima® Hydrogen Fueling Dispenser

THE NEXT GENERATION OF HYDROGEN DISPENSERS IS NOW

Optima® is the most advanced alternative fuel dispenser on the market today. Featuring a newly designed purpose built cabinet equipped with the powerful new MICON NEXTGEN 1.0® controller, Optima® enhances station control and performance via its unmatched data collection and communication capabilities.

Optima® is the result of over three decades of alternative fuels focused experience and feedback from the field. Recognizing a need for easily accessible detailed historical and real time data, Optima® offers greater functionality in extracting and synthesizing relevant data to identify trends, creating a smart station.

The Kraus Global Optima® Hydrogen dispenser offers a new level of fuel dispensing performance while maintaining the high standard Kraus Global has set for safety, reliability and accuracy.

Optima® serves you better:

- Introducing the PULSE™ Display
  - Revolutionary new proprietary display to communicate real time status of each fill
  - Users can visually follow fill progression
  - Provides operators visual data to monitor and troubleshoot station performance

- Uptime and Reliability
  - Save time and money with remote software upgrades, advanced monitoring, and troubleshooting tools
  - Easier serviceability with purpose built Hydrogen cabinet

- Fill Data and Reporting Capabilities for Each Hose
  - Real time data via PULSE™ display provides dispenser and station data to the user
  - Store data for larger analysis of overall station performance

- Accuracy and Completeness of Fill
  - Kraus Global has engineered a new, more powerful MICON® controller.
    - Faster data acquisition and sensing of key process variables
    - Direct connection between MICON NEXTGEN 1.0® and the mass flow meter (optional)
    - Utilizes the SAE J2601 fueling protocol. Custom protocols are also available in order to leverage the computing power of the MICON NEXTGEN 1.0® controller.
    - Full integration with available station equipment.
    - Superior data acquisition capabilities and analysis tools allow for more intelligent fact base filling variable adjustments in order to optimize fills
    - IrDA vehicle communications available
Giving you greater control, Optima’s® real time error reporting and remote set point configuration is used to aid station operators in automating and optimizing station performance for greatest profitability and uptime.

Introducing the Kraus Global PULSE™ display. This proprietary display communicates real time status of each fill. Information displayed allows the vehicle operator to be in tune with starting and ending parameters of their filling process, reassuring that a target was established and met. Service technicians can utilize the display to monitor the valve state, flow rate, and filling conditions to efficiently diagnose potential issues.

The display is designed for customization allowing the master station PLC to drive the information on the screen. The MICON NEXTGEN 1.0® provides open MODBUS registers that can be easily set up to take raw station data and display useful information (i.e., compressor run states, priority panel valve states, storage pressure on all banks, etc.) in real time.

Kraus Global understands the value of data and how it can be used to increase efficiency and profitability of a station. Recognizing a gap in the ability to obtain detailed data from the dispenser, Kraus Global engineered the new MICON NEXTGEN 1.0® controller to extract and communicate relevant data and provide it in a meaningful and easy to use way.

The MICON NEXTGEN 1.0® utilizes this data to compile informative reports which can be accessed from the dispenser remotely via the web in order to view real time and historical filling data in an easy to read manner. Data can be utilized to validate station uptime, complete fill accuracy, and fill times helping maximize station fueling contracts and customer satisfaction.

The MICON NEXTGEN 1.0® reporting tools further drill down into individual fills enabling station owners to adjust operating parameters thereby maximizing station performance. Fleet managers can further utilize this detail to evaluate the performance and fill conditions of each vehicle to ensure their fleet is fully optimized.

Optima® is the most advanced Hydrogen fueling dispenser on the market today giving you increased insight into the status of your dispensers and each fill at all times.
Station Operators will appreciate more control over operating parameters through superior data acquisition capabilities, analysis tools, and the expanded set of configurable filling variables. In addition, enhanced diagnostics identify dispenser performance enabling faster trouble shooting and root cause analysis on site or remotely. Software upgrades can be installed remotely minimizing down time from having to send a qualified technician to the site.

Grow your fleet customer base by providing Fleet Managers historical and real time filling data. Maximum up time at the dispenser will increase your customer’s reliance on your station to provide the best experience 24/7.

Enhanced diagnostics and the purpose built Optima® cabinet provide easier accessibility to internal components saving valuable Technical Support and Maintenance time and frustration while servicing the dispenser as required.

Kraus Global Promise
Kraus Global will continue to work with you, understand your business, and expertly guide you through the entire process of selecting the dispenser configurations which best suit your station design and meets your needs now and in the future. Our ability to customize solutions to suit your unique design criteria is a strength Kraus Global is recognized for in the alternative fuel industry.

Kraus Global is committed to the highest safety standards.

For specific engineering information about Optima® and the MICON NEXTGEN 1.0®, or for a custom proposal to add Optima® to your forecourt, please call 204-663-3601 or email us at inquiries@krausglobal.com.
# Optima® Hydrogen Dispenser

## Specifications

### Model: RETAIL

### Standard Features:
- **Single and Dual Sided Units**
- **Target Filling Pressure**:
  - 3,600 psig (230 barg)
  - 5,000 psig (350 barg)
  - 10,000 psig (700 barg)
- **Maximum Allowable Working Pressure**:
  - All system components up to 12,750 psig (875 barg) MAWP
- **Temperature**
  - Compensated to 15°C
- **Flow Rates**:
  - 8 Kg/min and 12 Kg/min
  - Split Flow options available
- **In-Cabinet or Remote Coalescing Filters**
- **Internal Piping**
  - Stainless Steel, available in sizes of 3/8” and 1/2”
  - Depending on flow characteristics desired and to best match station configuration
- **Primary Displays**:
  - Large backlit LCD display for Total Sale, Volume and Price per Unit, or Target Pressure, Actual Pressure, Temperature
- **Panels and doors painted black** (standard)
- **In-Cabinet or Remote Coalescing Filters**

### Computing and Controls:
- **MICON NEXTGEN 1.0® Controller and Register**
- **Communication Interfaces**:
  - Standard 2-wire POS/Credit Card Protocols
- **Remote configuration of dispenser(s)**
  - from a computer, tablet, or phone
- **Direct connection to mass flow meter**
  - Error codes, gas temperature, and other meter data can be accessed via MODBUS
- **Multiple POS/FMS/PLC communications interfaces**
- **MicroSD card data logging**
  - 24/7 of every transaction
- **Compatible with private fleet management systems**

### Available Options:
- **Full color 10.4” TFT high-resolution display**
- **Encrypted PIN Pad for retail debit and EMV credit card application** (pending completion)
- **Secure Card reader**
- **High Speed USB Printer for retail applications**
- **Customized, brand-centric graphic panels**
- **Multimedia capable - video and audio with customer interaction capability via display soft keys**
- **Prominent dispenser canopy topper for enhanced customer branding purposes**

### Regulatory:
- **PCI and EMV Credit/Debit Card Compliant**
- **ETL Intertek Certification**
- **NFPA 2**
- **NFPA 70, ASME B31.3**
- **ETL Certified Intrinsically Safe Inputs and Outputs for Class I, Division 2, Group B environments** (pending completion)
- **NTEP and Measurement Canada certified register and cabinet** (pending completion)

### Voltage:
- **120 VAC standard, 220/240 VAC available**
- **Amperage**
  - 10 to 15 Amps depending on options
- **Single Phase**
- **60 Hz, 50 Hz available**
- **+/- 10% Tolerance**

### Dimensions:
- **Height**: 93”
- **Width**: 46” at base, 47.5” at canopy
- **Depth**: 23.75” at base, 29” at canopy

### Operating Environment:
- **Temperature**
  - -40°C to +40°C
  - Humidity = 10-95% Rh
  - 120 VAC heater available for temps <-20°C

### Purge System:
- **NFPA 496 Compliant Type X purge system designed to fully declassify the upper cabinet enclosure**
- **See Controls and Register section**
- **Handle lever to start/stop fill located on hoister**

### Mechanical Controls and Valves:
- **Manual external shut-off valves, 1 per side**
- **Internal solenoid valves or high-flow actuated ball valves**
- **One Internal Liquid filled pressure gauge per hose**
- **Check valve between sequencing valves**
- **Internal Piping Connections, available in sizes of 3/8” and 1/2”**
- **Depending on flow characteristics desired and to best match station configuration**
- **One ASME pressure relief valve/hose**
- **1/2” Vent line**
- **Hydrogen Gas detector in cabinet**

### Computing and Controls:
- **MICON NEXTGEN 1.0® Controller and Register**
  - 100 MB Fiber Optic Isolated Ethernet connection allows for safe high-speed connection to the dispenser
  - Communication Interfaces:
    - Standard 2-wire POS/Credit Card Protocols
    - Remote configuration of dispenser(s) from a computer, tablet, or phone
    - Direct connection to mass flow meter. Error codes, gas temperature, and other meter data can be accessed via MODBUS
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