

SmartFuel® H70/H35 retail hydrogen dispenser



Air Products' SmartFuel H70/H35 retail hydrogen dispenser provides the newest generation of hydrogen dispensing to meet consumer expectations of refilling fuel cell vehicles in a safe, fast and reliable manner.

Our extensive experience in hydrogen dispensing has led to both unique innovations in hydrogen dispensing technology and a superior level of safety built into the Smartfuel H70/H35 hydrogen dispenser.

As the worldwide leader in hydrogen fueling technology, we've installed hydrogen dispensers throughout the world since 1997, enabling us to gain invaluable experience to continually master our dispenser product and hydrogen fueling station technology.

In development with a leading manufacturer of gasoline dispensing equipment, Air Products adapted all the consumer features and capabilities of a retail gasoline dispenser into the SmartFuel H70/H35 hydrogen dispenser. The dispenser's attractive design provides the same look, feel and payment options of an existing gasoline dispenser.

The dispenser's fueling process utilizes the protocols described in SAE TIR J2601 (2010) and can support OEM-specific fill algorithms. The hydrogen fueling dispensing equipment includes SAE-certified dispensing nozzles, gas piping and valves, and includes all the safety features required to fuel highly pressurized gas.

Built on a foundation of continuing developments, the SmartFuel H70/H35 hydrogen dispenser is equipped with the latest Hydrogen Vehicle Authorization System (HVAS), providing identification of the type of vehicle at the dispenser. This dispenser is also designed with wireless data collection and archiving through Air Products' electronic Remote Access Monitoring (eRAM) system, allowing the station to be monitored for proper operation.

Beyond meeting all the applicable code requirements, the SmartFuel H70/H35 hydrogen dispenser has additional safety features such as:

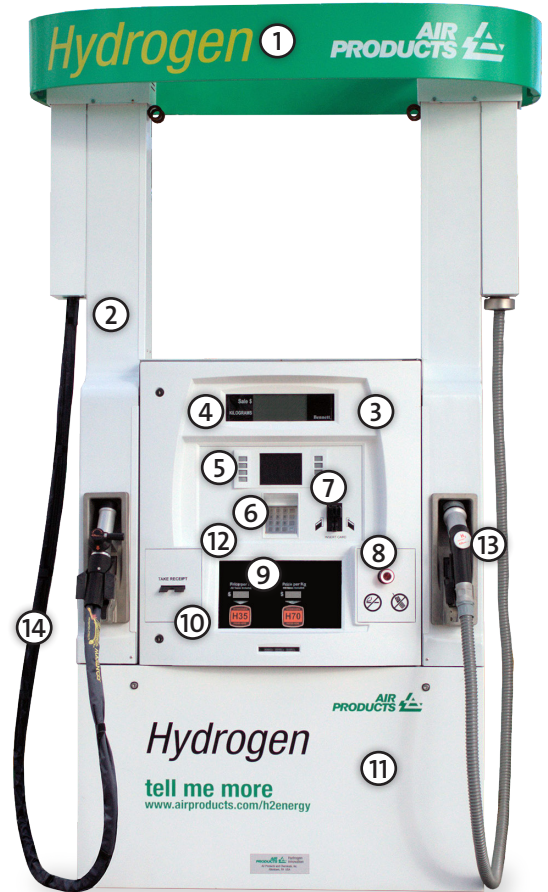
- a secondary control system to independently stop the filling process in the event of a hose break, high hose pressure or abnormal ramp rates
- enclosed and shrouded breakaway connectors to prevent the release of hydrogen if a vehicle pulls away from the dispenser during filling
- idle hose leak detection
- protective jackets over hoses

Key features of the SmartFuel H70/H35 retail hydrogen dispenser:

- H70 (700 bar/70 MPa) and H35 (350 bar/35 MPa) dispensing pressures
- Complies with Society of Automotive Engineers (SAE) Standards SAE-TIR-J-2600, SAE-TIR-J-2601, SAE-TIR-J-2719, and SAE-TIR-J-2799
- Utilizes OEM-specific fill algorithms
- Nominal fill quantity of 1–10 kg per fill for light-duty vehicles
- Temperature control of hydrogen gas to –40°C
- Complete fill accuracy of 98% with communications
- Credit card and RFID payment options with store point-of-sale (POS) interface

Dispenser features

1. Valence with gas detection sensors for immediate leak detection
2. Enclosed and shrouded breakaway connectors
3. Reinforced polycarbonate upper door with ergonomic design to provide simple, customer-friendly user interface
4. Energy-efficient display panel with LED backlighting for clear visibility of display in all lighting conditions; all displays equipped with clear, hard-coated sacrificial lenses for increased durability and extended life
5. Debit payment system and 5.7" color LED display with on-screen training instructions for first-time users
6. Durable EPP/TDS keypad
7. Credit card reader
8. Emergency stop button and operating instructions
9. H70 and H35 unit price displays
10. Unique fueling pressure selection buttons with no moving parts for unmatched durability
11. Lower door assembly
12. RFID (radio frequency identification detector) reader for vehicle identification and communications
13. Universal metal nozzle boot—the industry's most durable
14. Protective jackets over hoses



The SmartFuel H70/H35 hydrogen dispenser incorporates the following design and safety codes:

- ASME B31.3 process piping code
- NFPA 70 national electric code
- NFPA 496 purged enclosures
- NFPA 497M classification of gases, vapors, dusts for electrical equipment in hazardous (classified) locations
- International Fire Code—2006
- NFPA 55 storage, use and handling of compressed gases and cryogenic fluids in portable and stationary containers, cylinders, and tanks
- NFPA 2 vehicle fuel system code

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