The HG 500 series of ultra high purity hydrogen generators offers high performance and reliable operation even under harsh operating conditions such as in industrial installations. Utilising field proven PEM cell technology, hydrogen is produced from deionised water on demand only. Using a HG 500 instead of high pressure hydrogen cylinders saves money and results in a high level of safety.

The HG 500 ideally complements online GC systems and other type of analyzers to be used for process, emissions and environmental monitoring applications. Due to the ultra high purity grade of hydrogen being generated, the HG 500 allows to operate any type of combustion detectors and even to supply hydrogen as carrier gas for GC applications.

The menu driven user interface and the innovative control software ensures easy setup of the HG 500 as well as operational safety and reliability. Operation of the hydrogen generator can be controlled and monitored remotely using field bus communication via Modbus RTU protocol. Different versions of the HG 500 operate at maximum flow rates between 160 ml/min to 1000 ml/min. Automatic refill of the internal water tank from an external canister or deionised water system allows unattended operation over long periods of time.

Unique SMARTdry™ technology

Instead of using a desiccant cartridge to be replaced frequently, our premium model of hydrogen generators features unique SMARTdry™ technology for efficient water removal. This allows the HG 500 series of gas generators to supply hydrogen at consistently high purity levels and provides maintenance free operation and low cost of ownership.

Safe hydrogen supply at ultra high purity levels
UHP Hydrogen Generator – HG 500
## TECHNICAL DATA

### General
- **Enclosure**: 19” plug-in case
- **Height**: 4 height units
- **Depth**: 460 mm
- **Weight**: 15 kg to 24 kg, depending on version / flow rate
- **Mounting**: designed for cabinet/rack mounting
- **Ambient temperature**: 5°C to 35°C
- **Humidity**: 5% to 80% relative humidity, non-condensing
- **EMC**: CE-marking, conformity with EMC-guidelines 2004/108/EC
- **Electrolysis cell**: PEM electrolysis cell, does not require caustic solutions to operate (PEM = Polymer Electrolyte Membrane)
- **Internal water tank**: water capacity 1.2 liter
- **Water removal**: SMARTdry™ technology for efficient water removal

### Hydrogen specifications
- **Flow rate / versions**: max. 160 / 250 / 400 / 650 / 800 / 1000 ml/min
- **Outlet pressure**: 2.0 barg to 10.0 barg
- **Hydrogen purity**: 99.9999 % (gas quality grade 6.0)

### Instrument supply
- **Power supply**: 100 – 240 VAC
- **Line frequency**: 50 to 60 Hz
- **Power consumption**: 200 W to 800 W, depending on version / maximum flow rate
- **Water supply**: deionised water, ASTM II, >1MΩ, <1μs, filtered to <100μm automatic water refill from external canister or deionised water system
- **Water consumption**: 800 ml/week (24h/7d at hydrogen flow rate of 100 ml/min)

### Connections
- **Hydrogen outlet port**: 1/8” bulkhead union
- **Water hose**: Quick release push in fitting
- **Ion exchange cartridge**: 2 dual connection ports with quick release push in fittings for ion exchange cartridge (allows to replace ion exchange cartridge without operating interruption)

### Operation
- **Setup**: Menu driven user interface for manual setup and operation
- **Display**: Large and back-lit LCD display to indicate generator status, outlet pressure, hydrogen flow rate and operation mode
- **Data entry**: Capacitive touch keys
- **Operation modes**: Local control or remote control via Modbus RTU

### Communication
- **Communication ports**: 2 x RS-485 for field bus communication via Modbus RTU