

**nel** ●

number one by nature™

**On-Site Hydrogen Solutions for Meteorology**

**Featuring Proton® PEM**

**Advanced Water Electrolysis Technology**



[www.ProtonOnSite.com](http://www.ProtonOnSite.com)  
Info@ProtonOnSite.com  
01.203.949.8697

**PROTON® PEM**

## In the meteorology field, remote locations are often used for balloon soundings, leading to a number of important issues:

- Logistical difficulties associated with delivered gas
- Safety issues related to high pressure cylinders
- Cost associated with delivered gas
- Unreliable and reduced number of soundings resulting in missing atmospheric data

**Our breakthrough hydrogen electrolysis systems utilize advanced Proton Exchange Membrane (PEM) technology to address your hydrogen needs with high performance, reliable and cost effective solutions.**

### **FLEXIBILITY**

- Compact design, small footprint
- Minimal installation requirement
- Fully automatic system with remote monitoring

### **COST EFFICIENCY**

- Preferred higher pressure solution
- Lower capital investment compared to alternate technology
- Minimal annual maintenance

### **RELIABILITY**

- 99%+ uptime expected
- Start & stop cycling without stack degradation
- Undisrupted supply

### **SAFETY**

- No caustic material handling
- Minimal storage and hazard gas handling
- Advanced differential pressure design is key to our exemplary safety



# Proton PEM S Series Hydrogen Generation Systems

A safe, reliable on-site hydrogen generator in an integrated, automated, site-ready enclosure. Load following operation automatically adjusts output to match demand.

MODEL	S10	S20	S40
Electrolyte	Proton Exchange Membrane (PEM) - caustic free		
Purity	> 99.9995% (water vapor < 5 ppm -65°C (-85°F) dewpoint, N <sub>2</sub> < 2 ppm, O <sub>2</sub> < 1 ppm, all other undetectable)		
Hydrogen Production	10 SCF/hr 4.8 L/min 0.26 Nm <sup>3</sup> /hr	20 SCF/hr 9.4 L/min 0.53 Nm <sup>3</sup> /hr	40 SCF/hr 18.8 L/min 1.05 Nm <sup>3</sup> /hr
Turndown	0 to 100% net product delivery		
Delivery Pressure	13.8 barg (200 psig)		
DI Water Quality	Deionized, ASTM Type II, > 1 Meg Ohm-cm (< 1 microSiemen/cm) Deionized, ASTM Type I, > 10 Meg Ohm-cm (< 0.1 microSiemen/cm)		
DI Water Feed Pressure	1.5 - 4 barg / 21.8 - 58 psig		
DI Water Maximum Consumption Rate	0.235 L/hr 0.065 gal/hr	0.47 L/hr 0.13 gal/hr	0.94 L/hr 0.25 gal/hr
Electric Supply	205 to 240 VAC, single phase, 50 or 60 Hz		
Recommended Breaker Rating	4kVA	8 kVA	12 kVA
Dimensions, W x D x H	31" x 38" x 42" / 79 cm x 97 cm x 107 cm		
Weight	475 lbs / 216 kg		
Standard Siting Location	Indoor, level ± 1°, 0 to 90% RH non-condensing Non-hazardous/non-classified environment		
Ambient Temperature Range	5°C to 50°C (41°F to 122°F)	5°C to 40°C (41°F to 104°F)	
<b>CONTROL SYSTEMS FEATURES</b>			
	On-board H <sub>2</sub> Leak detection		
	Automatic fault detection and system depressurization		
	E-stop		
<b>CERTIFICATIONS</b>			
	ISO 9001, CE, TUV, cTUVus (UL and CSA equivalent)		

Specifications are subject to change. Please consult Applications Department for solutions to best fit your needs

# Proton Care

## Global Service and Support Solutions

Nel Hydrogen is proud to offer products and services that assure a superior level of customer satisfaction. Our uncompromising attention to excellence and quality enables us to deliver, install and support gas generation solutions on every continent. With proven reliability and world-class coverage in over 75 countries, we continue to foster a strong network of lasting relationships with our customers.

Let us help you, visit [www.ProtonOnSite.com](http://www.ProtonOnSite.com) to learn more!



**nel**   
number one by nature™

[www.ProtonOnSite.com](http://www.ProtonOnSite.com)  
Info@ProtonOnSite.com  
01.203.949.8697  
10 Technology Drive,  
Wallingford, CT, USA, 06492

**PROTON® PEM**



PD-0600-0065

© 2011-2016 Proton Onsite. All Rights Reserved.  
Proton, Proton OnSite, Proton Energy Systems  
and the Proton symbol are trademarks of Proton  
Energy Systems, Inc. d/b/a Proton OnSite

