

Stationary



## HyFrame®

The Modular Fuel Cell System, Ready For Integration



Example of stationary application equipped with the HyFrame®

### Advantages

- Emission-free solution for generating electrical and thermal energy from hydrogen
- Very high efficiency and reliability
- Parallel operation of several HyFrames®
- High operational safety
- Liquid cooling, use of process heat possible
- Easy hybridization with batteries
- Voltage Adaption with DC/DC converter
- Maintenance-friendly

### Typical Application Areas

- Emergency power supply
  - Railway infrastructure
  - Telecom / Radio stations
  - Process industry
  - Data centres
  - Uninterruptible power supply (UPS)
- Autonomous power supply
  - Mobile power supply
  - Off-Grid power supply
  - Off-Grid charging stations
- Power (& heat) generation
  - Peak shaving & grid stabilization
  - Re-electrification of green hydrogen
  - Industrial & residential power supply

Technical Specifications	HyFrame® S28	HyFrame® S36	HyFrame® S43
<b>Electrical Interface</b>			
Maximum Current Output [A]	130	160	190
Voltage Range [VDC] (Voltage conversion via DC/DC included)	200 – 770		
Peak Power [kW] <sup>1</sup>	25.0	31.2	37.4
Nominal Continuous Power [kW] <sup>1</sup>	22.8	28.5	34.2
Minimal Continuous Power [kW] <sup>1</sup>	8.4	10.5	12.6
Supply Voltage	3~400 VAC / 50 Hz & 24 VDC		
Electrical Consumption @ Peak Power [kW]	3.5	4.4	5.2
Electrical System Efficiency [%]	up to 52		
<b>Hydrogen Interface</b>			
Hydrogen Quality	ISO 14687-2 / SAE J2719 (Type I, Grade E, Category 3)		
Hydrogen Supply Pressure [bar <sub>g</sub> ]	6.0 – 7.5 (optional 3.0 – 3.5)		
Hydrogen Consumption @ Peak Power [kg/h]	1.7	2.1	2.5
<b>Cooling Interface</b>			
Coolant Inlet Temperature [°C]	-30 to +45		
Coolant Outlet Temperature [°C]	<60		
<b>Environmental Conditions</b>			
Ambient Operating Temperature [°C]	+5 to +40		
Storage & Transportation Temperature [°C] <sup>2</sup>	-20 to +60		
Operating Altitude [m]	<2000		
<b>Dimensions / Others</b>			
L x W x H [mm x mm x mm]	920 x 600 x 1650		
Tare weight [kg]	380	390	400
Communication Interface	Modbus		
Conformity	CE acc. to Machinery Directive		

<sup>1</sup> Begin of Life, without consideration of self-consumption

<sup>2</sup> Special procedure for range below 0°C necessary

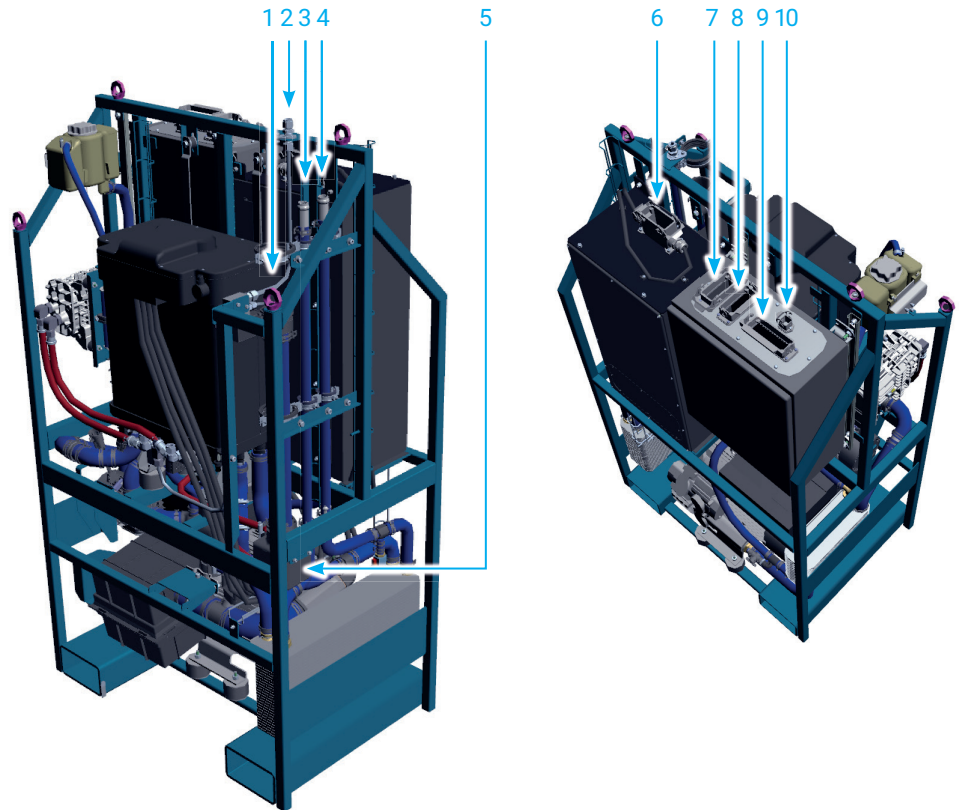


**Cleantech Competence**

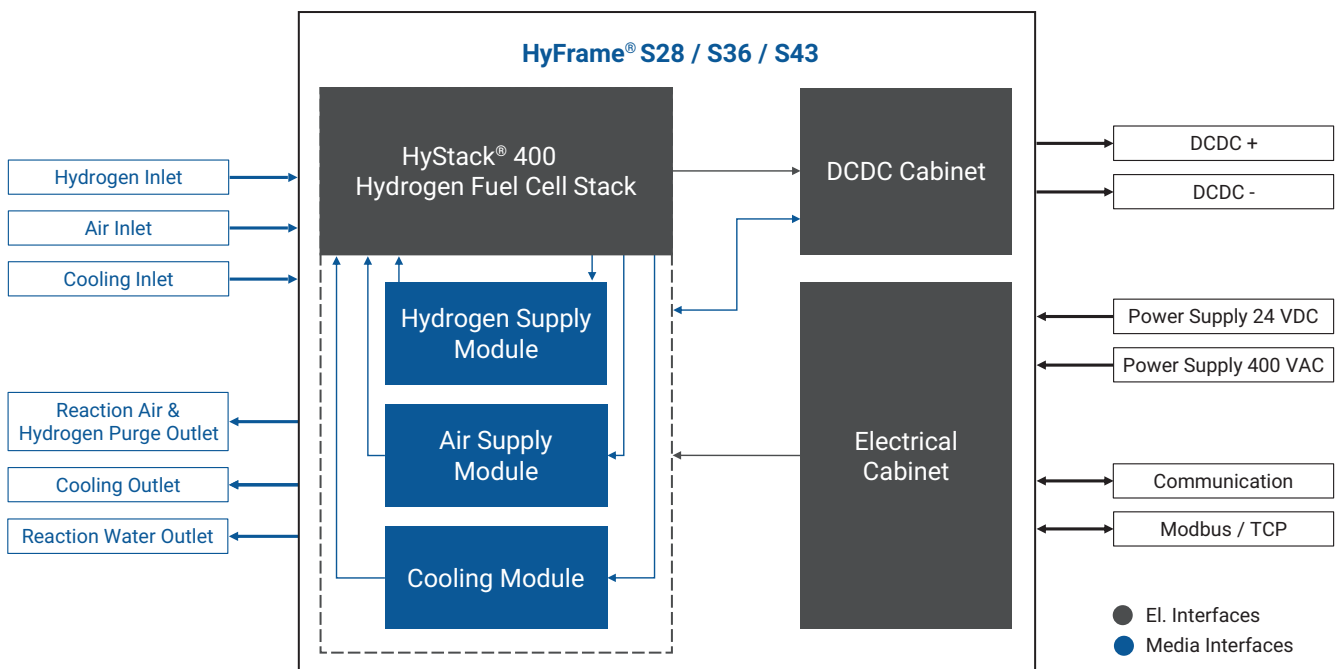
## HyFrame® Interfaces

1. Reaction Air And Hydrogen Outlet
2. Hydrogen Inlet
3. Cooling Outlet
4. Cooling Inlet
5. Reaction Water Outlet

6. DCDC Interface
7. Power Supply 400 VAC
8. Power Supply 24 VDC
9. Modbus / TCP
10. Communiacion

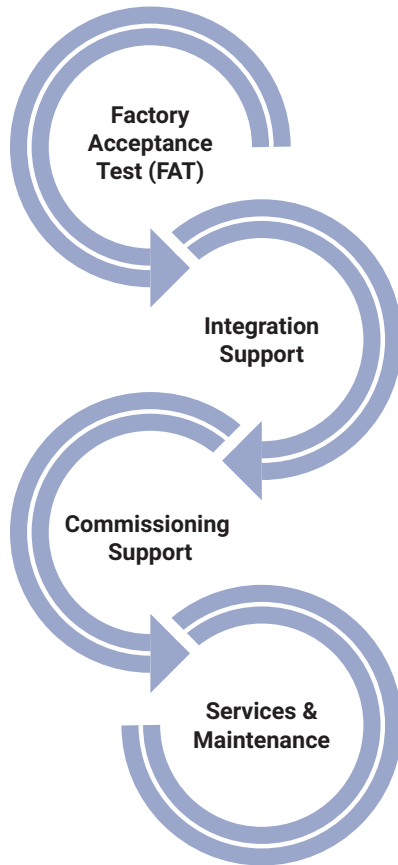


## Schematic Diagram Of HyFrame® Interfaces





## Comprehensive Customer Service



- The factory acceptance test is carried out in our factory according to a standardized test procedure. The measured values and the result of the fuel cell performance are documented in a test report.
- Integration support for the installation of the system into the customer application with its specific interfaces
- Start up support during the commissioning of the system at the customer application
- Special parameters settings according to customer requirements
- Preventive Maintenance
- Remote Support
- Repair Center
- Training

## About Proton Motor Fuel Cell GmbH

You, as a customer, are our focus. Benefit from our expertise and many years of experience in the development and production of hydrogen fuel cell systems. "Designed & Made in Germany" since 1998.

In addition to the stationary sector, we also offer solutions for the following markets: mobile, maritime and railway.

By purchasing fuel cell systems and integrable hybrid solutions from Proton Motor, you are making an important contribution to the energy transition.

**For more information, please reach out to our sales team.**

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Heavy Duty

Maritime

Rail