**Fuel Cell System**
Teledyne’s proven proton exchange membrane (PEM) fuel cell technology provides excellent efficiency and long life (>10,000 hrs.). The stack design is specifically tailored for operation with pure oxygen and includes design aspects generated through years of experience with this technology. The fuel cell system features an integrated balance-of-plant (BoP) with ejector driven reactant (EDR) technology for reactant recirculation. The BoP allows the fuel cell stack to be fed reactants in a “dead-ended” configuration maximizing energy delivery.

**Reactant Storage**
The fuel cell system is reactant storage agnostic. Reactants can be supplied via compressed gas, cryogenic, or solid-state reactant storage systems. The Subsea Power Node is equipped with a compressed-gas reactant storage system. This storage system is at a technology readiness level (TRL) of 9 and is commercially refillable.

**High TRL**
Teledyne has a proven history of supplying high reliability fuel cells to NASA and other customers.

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**For more information:**
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Specifications

1. EDR Fuel Cell System Module
   - Minimal components for maximum reliability
   - 8 kW power output (per module)
   - Module capable of processing > 30 MWh of energy
   - Operation at full ocean depth

2. Hybridization / Power Conditioning Module

3. Reactant Storage (H₂/O₂)
   - Modular to meet energy and reactant storage system requirements

4. Teledyne Benthos Acoustic Modem

5. Subsea Tested Components
   - Teledyne ODI wet mate connectors
   - Electrical power and data transfer

6. Skid Details
   - 4.5m X 1.6m X 1.5m
   - 3300 kg mass in air (570 kg wet)
   - Marine recovery system available

7. Electrical Output
   - Voltage range: as specified
   - Power: 1-16 kW continuous output

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Fuel Cell Vessel

- Pressure Vessel
- Product Management
- Fuel Cell Stack
- Passive Flow Control
- Pressure Regulation

Subsea Supercharger

Docking Station

Surface Buoy

Subsea Supercharger

Docking Station

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Teledyne Energy Systems
Everywhere you look™