PRODUCT

MATRIX
HYDROGEN

E-S

PRODUCT MANUAL

Professional Strong And Stable

STANDBY POWER

10KW/50KW
50KWH/90KWH

SPECIFICATION

MODEL		ELS 5	Unit
STANDARD		- ISO12100: PLD - ISO13849: PLD - IEC62061: SIL2	-
COLOR OPTION		SILVER or BLACK	-
Performance Values	Charge Power	8.85	kW
	Discharge Power	10	kW
	Capacity	50	kWh
Electrical Parameters	BMS	Included	-
	Current	-550 to +250	A
	Voltage	48	V_{DC}
	Phase	Single Phase	
Features	Start & Shutdown Time	Cold start time: <5 Hot start time: <1 Shutdown time: <5	min
	Emergency Interupt	<100	ms
	Lifelong	>15	yrs
Mechanical & Environment	Dimensions (L*W*H)	1333*563*1758	mm
	Weight	850	kg
	Environment Conditions	Temperature: 2℃ Humidity: 0% to 95% Max Altitude: 2000m Pollution Degree3 [IEC 60664-1]	-
	Water Consumption	0.5	L/hr
Safety	Safety Relay Architecture	Safety controller, PLC and wiring are configured with redundant wiring capable of disconnecting and rendering the equipment safe under alarm or error conditions in accordance with functional safety design and risk assessments.	-
	Loss of Ventilation	Detects failure of cabinet ventilation fans or heat exchanger fans.	-
	Software / Hardware Alarms	See Alarm list for details	-
	Response to Software/Hardware Alarms:	- System isolates all inlet valves (disconnection and isolation of H2 gas) - DCDC BUS disconnects load/power supply from the fuel cell and electrolyzer - Software enters stop state	-
NOVA SCADA / MES System	Accessibility	Browser-based access via a designated URL.	-
	User Roles & Security	Role-based access control for secure, user-specific permissions.	-
	Real-time Monitoring	Graphical interface for live system performance tracking and parameter trends.	-
	Visualization Tools	Customizable graphs, scatters plots, and cell voltage monitoring.	-
	Support Systems	Compatable with a wide range of industrial control and instrumentation systems.	-
	Reporting & EXPORT	Data and configuration export in standard formats for analysis and reporting.	-
Certifications	CE	CE conformity assessment and manufacturer declaration of compliance. - Pressure Equipment directive (2014/68/EU) compliant - Low voltage directive (2014/35/EU) compliant	-
	TUV SUD	HAZOP analysis and assessment for overall system architecture	-
	ISO 22734:2019	Hydrogen generators using water electrolysis	-

STANDBY POWER

10KW/50KW
50KWH/90KWH

SPECIFICATION

MODEL		ELS 10	Unit
STANDARD		- ISO12100: PLD - ISO13849: PLD - IEC62061: SIL2	-
COLOR OPTION		SILVER or BLACK	-
Performance Values	Charge Power	8.85	kW
	Discharge Power	50	kW
	Capacity	90	kWh
Electrical Parameters	BMS	Included	-
	Current	-33 to +92	A
	Voltage	380	V_{AC}
	Phase	3 Phase,	-
Features	Start & Shutdown Time	Cold start time: <5 Hot start time: <1 Shutdown time: <5	min
	Emergency Interupt	<100	ms
	Lifelong	>15	yrs
Mechanical & Environment	Dimensions (L*W*H)	1333*776*1758	mm
	Weight	970	kg
	Environment Conditions	Temperature: 2℃ Humidity: 0% to 95% Max Altitude: 2000m Pollution Degree3 [IEC 60664-1]	-
	Water Consumption	0.5	L/hr
Safety	Safety Relay Architecture	Safety controller, PLC and wiring are configured with redundant wiring capable of disconnecting and rendering the equipment safe under alarm or error conditions in accordance with functional safety design and risk assessments.	-
	Loss of Ventilation	Detects failure of cabinet ventilation fans or heat exchanger fans.	-
	Software / Hardware Alarms	See Alarm list for details	-
	Response to Software/Hardware Alarms:	- System isolates all inlet valves (disconnection and isolation of H2 gas) - DCDC BUS disconnects load/power supply from the fuel cell and electrolyzer - Software enters stop state	-
NOVA SCADA / MES System	Accessibility	Browser-based access via a designated URL.	-
	User Roles & Security	Role-based access control for secure, user-specific permissions.	-
	Real-time Monitoring	Graphical interface for live system performance tracking and parameter trends.	-
	Visualization Tools	Customizable graphs, scatters plots, and cell voltage monitoring.	-
	Support Systems	Compatable with a wide range of industrial control and instrumentation systems.	-
	Reporting & EXPORT	Data and configuration export in standard formats for analysis and reporting.	-
Certifications	CE	CE conformity assessment and manufacturer declaration of compliance. - Pressure Equipment directive (2014/68/EU) compliant - Low voltage directive (2014/35/EU) compliant	-
	TUV SUD	HAZOP analysis and assessment for overall system architecture	-
	ISO 22734:2019	Hydrogen generators using water electrolysis	-

GENERATOR

250KW
NATURAL GAS POWER

SPECIFICATION

MODEL		ELS-PRIME	Unit
STANDARD		EN 61000-6-2, EN 61000-6-4	-
COLOR OPTION		SILVER	-
Performance Values	Input	Natural gas 0.82-1.24 bar (1 bar nominal)	-
	Output	250	kW
	Efficiency	Cumulative electrical efficiency :65–53% >90% (thermal efficiency+electrical efficiency)	
Electrical Parameters	BMS	Included	-
	Frequency	50Hz	Hz
	Voltage	380	V_{AC}
	Phase	3 Phase	-
Features	Start & Shutdown Time	Cold start time: <5 Hot start time: <1 Shutdown time: <5	min
	Emergency Interupt	<100	ms
	Lifelong	>10	yrs
Mechanical & Environment	Dimensions (L*W*H)	7600*1280*2358	mm
	Weight	11500	kg
	Environment Conditions	Temperature: -20℃-45℃ Humidity: 0% to 95% Max Altitude: 2000m	-
	Emission Standard	Emission Standard: Meets stringent [CARB 2007] NOx :0.003 SOx :Negligible CO: 0.013 VOCs :0.01 CO2@ stated efficiency :679–833	lbs/MWh
	Location	Outdoor	-
Safety	Safety Relay Architecture	Safety controller, PLC and wiring are configured with redundant wiring capable of disconnecting and rendering the equipment safe under alarm or error conditions in accordance with functional safety design and risk assessments.	-
	Loss of Ventilation	Detects failure of cabinet ventilation fans or heat exchanger fans.	-
	Software / Hardware Alarms	See Alarm list for details	-
	Response to Software/Hardware Alarms:	- System isolates all inlet valves (disconnection and isolation of H2 gas) - DCDC BUS disconnects load/power supply from the fuel cells - Software enters stop state	-
NOVA SCADA / MES System	Accessibility	Browser-based access via a designated URL.	-
	User Roles & Security	Role-based access control for secure, user-specific permissions.	-
	Real-time Monitoring	Graphical interface for live system performance tracking and parameter trends.	-
	Visualization Tools	Customizable graphs, scatters plots, and cell voltage monitoring.	-
	Support Systems	Compatable with a wide range of industrial control and instrumentation systems.	-
	Reporting & EXPORT	Data and configuration export in standard formats for analysis and reporting.	-
Certifications	CE	CE conformity assessment and manufacturer declaration of compliance. - Pressure Equipment directive (2014/68/EU) compliant	-

SERVICES

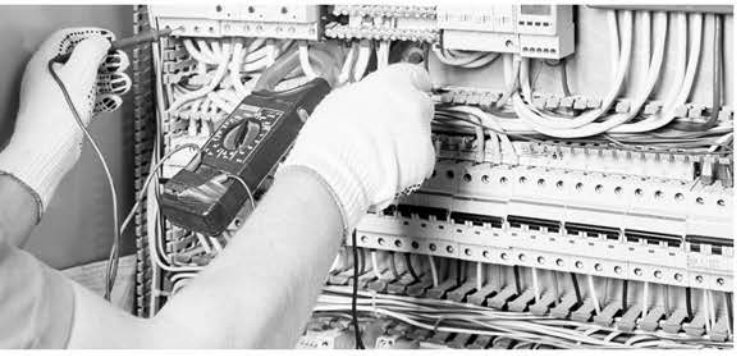
During the warranty oeriod, repair or replacement of defective conponent will be provided at no additional cost.

1 YEAR

Product is covered under a limited warranty of 1 year from the date of delivery.
The warranty includes coverage for manufacturing defects, material failures and software malfunctions under normal conditions of use.

If you wish to extend the warranty, we also offer the option...

The warranty period can be extended to three years, during which you can enjoy free repairs and regular inspections. You can choose to extend the warranty when placing your order or separately purchase the value-added service after the warranty period expires.



4 MONTH

It only takes 4 months from order placement to factory delivery. Multiple delivery methods are available.

Instalation

Equipped with pre-installed plugs and water inlet ports for convenient installation and easy maintenance.

Training

Up to FIVE (5) days of in-factory training and commissioning of equipment by customer's service personal included at the facility

Deliver documents

- P&ID process and Iinstalation diagram
- Leak check test report
- Electrical drawings
- Facility connections drawing [general layout drawing]
- Equipment operation and maintenanceE manual
- NOVA software operation manual

For more details, please visit:
www.matrixhydrogen.com

Quality of craftsmanship

MATRIX
HYDROGEN

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