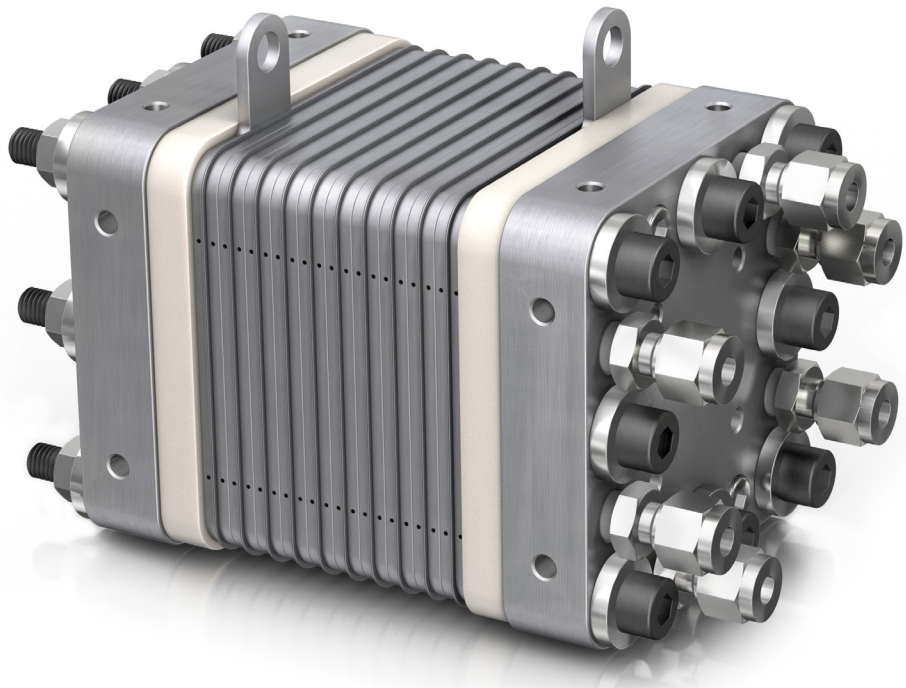


We pioneer motion

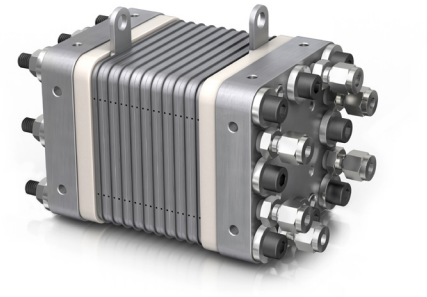
Electrolysis will ensure the success of the energy transformation

PEMWE needs energy.
Electricity from fossil fuels such as natural gas or coal are currently used for hydrogen generation. Hydrogen production using fossil resources releases CO_2 emission, is called gray hydrogen and is not climate neutral. However, if renewable energy sources such as wind energy is used to split H_2O, green hydrogen without CO_2 emissions is produced. Green Hydrogen is climate neutral and should be the standard in the future to achieve ambitious energy transformation goals.
This is where Schaeffler gets involved. Green hydrogen can be produced from pre-treated water using PEM electrolyzers and renewable energy sources. Our aim is to make this type of hydrogen synthesis available to industry in the future.

SCHAEFFLER

Components for Schaeffler PEM electrolyzers

Hydrogen is produced in PEM electrolyzers (electrolyzers with polymer electrolyte membranes) using purified water.
Our electrolyzer stacks are available in a range of sizes and designs.
The Hydron PowerStack K0 is a multi-versatile single-cell electrolyzer stack with an active cell area of 10 cm^2 and is specifically developed to facilitate research and development activities on membranes, catalyst and electrodes.
The Hydron PowerStack K1 stack features an active cell area of 25 cm^2, boasts high current density operation and is available in a single-cell or multi-cell configuration. This platform is developed for material research purposes as well a small scale electrolysis systems.
The Hydron PowerStack K10 has an active cell area of 100 cm^2 and is available in multi-cell configurations. This platform can facilitate R&D activities on stack materials and electrochemical processes and can be applied in small to medium scale electrolysis systems. The internal components are user-exchangeable for fast, in-house development.



Specifications	**HYDRON K1 stack platform***					
Electrolyzer type	Polymer Electrolyte Membrane					
Specifications for stack with cell quantity(1)	1	2	3	4	5	10
Nominal H_2 production rate(2)	10,4 NL/hr	20,9 NL/hr	31,3 NL/hr	41,8 NL/hr	52,2 NL/hr	104,4 NL/hr
Nominal O_2 production rate(2)	5,2 NL/hr	10,4 NL/hr	15,6 NL/hr	20,8 NL/hr	26 NL/hr	52 NL/hr
Maximum H_2 and O_2 discharge pressure (MAWP)(3)	30 bar (g)					
Power supply current requirements (0 – 4 A/cm^2)	0 – 3 V DC	0 – 5 V DC	0 – 8 V DC	0 – 10 V DC	0 – 12 V DC	0 – 24 V DC
Current range (0 – 4 A/cm^2)	0 – 100 A	0 – 100 A	0 – 100 A	0 – 100 A	0 – 100 A	0 – 100 A
Ambient temperature range	5 – 40 °C	5 – 40 °C	5 – 40 °C	5 – 40 °C	5 – 40 °C	5 – 40 °C
Stack Dimensions (LxHxW)(4)	113 x 96 x 118 mm	119 x 96 x 118 mm	126 x 96 x 118 mm	132 x 96 x 118 mm	139 x 96 x 118 mm	171 x 96 x 118 mm
Stack Weight	~ 4,5 kg	~ 4,5 kg	~ 4,5 kg	~ 5 kg	~ 5 kg	~ 6 kg

* Catalyst Coated Membranes are not included in the scope of delivery
(1) Specifications apply to PEM type MEA based on 175 micron PFSA membrane, 60 °C operating temperature and at ambient discharge pressure.
(2) Nominal current density 1 A/cm^2, nominal current 25 A.
(3) MAWP – maximum allowable working pressure.
(4) Max. outside envelope, incl. media connectors and power terminals.

Technical details and components are subject to change without notice v220421

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