Explosion Proof Circulating Pump

Hydrogen circulation pump for fuel-cell systems up to 150 kW



Shaftless, fully sealed

The impeller is driven without a shaft connection, so there is no dynamic seal. The partition seals the gas path completely — explosion-proof and safer.

Disc motor design

Noise is reduced by 10 % compared with radial-flux motors, and the structure stays compact.

High reliability

Service life reaches 20,000 h, which cuts replacement and maintenance cost.

Compact and light

Volume reduced by 50 % and weight by 60 % — under 4 kg complete.

Model selection

Parameter	KG300	KG500	KG700	KG1000	KG1500	KG HV	KGH 125℃
Rated voltage	24 V	24 V	540 V	540 V	540 V	800 V	540 V
Rated power	500 W	650 W	850 W	1200 W	2200 W	1200 W	1200 W
Rated flow (H_2)	300 slpm	500 slpm	700 slpm	1000 slpm	1500 slpm	1000 slpm	1000 slpm
Pressure rise	15 kPa	15 kPa	15 kPa	15 kPa	20 kPa	15 kPa	15 kPa
Speed (rpm)	24000	24000	24000	22000	18000	22000	22000
Integration	Integrated	Integrated	Separate	Separate	Separate	Separate	Separate
Env. temp. range	−40…+65 °C	−40…+65 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C
Medium temp. range	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+85 °C	−40…+150 °C

Common specifications

Communication	CAN 2.0B	**Protection level**	IP6K7
Cooling	Motor and controller air cooling	**Size (L×W×H)**	See model table
Dimensions	160 × 170 × 137 mm (KG300 / KG500) · Pump 164 × 120 × 149 mm, controller 276 × 198 × 95 mm including connector — larger models		

Model lineup

KG300 · KG500

Low-voltage 24 V units in an integrated pump-and-controller housing. Up to 500 slpm, the entry point for small fuel-cell systems.

KG700 · KG1000 · KG1500

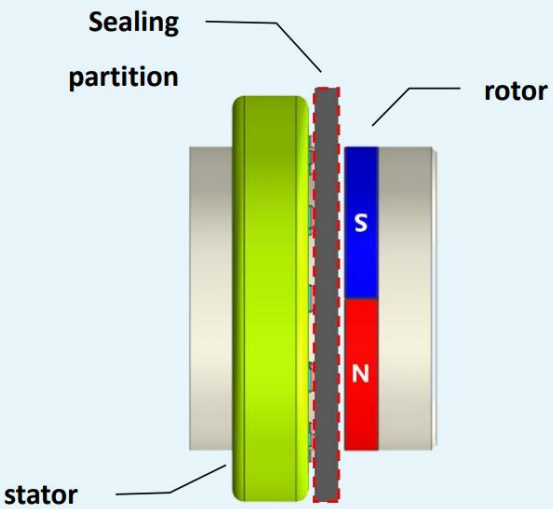
540 V units with a separate controller, rated 700 to 1500 slpm and up to 2200 W. KG1500 raises the pressure rise to 20 kPa.

KG HV · KGH 125℃

An 800 V high-voltage variant and a high-temperature version for media up to 150 °C.

Safety design and system integration





Safety design

Safety design, no shaft connection between impeller and motor, completely sealed by partition, explosion-proof and safer.

Section view

Stator

The disc motor stator carries the magnetic field that drives the rotor without any mechanical connection.

Sealing partition

A sealed barrier between the process gas and the motor — the ignition path is removed entirely.

Rotor

Driven axially by the rotating field, with S and N magnet poles and no shaft passing through the seal.

Application

The pump circulates hydrogen in the fuel-cell system and is used in series with a hydrogen ejector, meeting the recirculation demand of systems up to 150 kW. Seven models cover 300 to 1500 slpm and 24 V to 800 V supply, with a high-temperature version for 125 °C media.

What the design delivers

Explosion-proof and safer

The partition completely seals the gas path, so the ignition source is never exposed to hydrogen.

No dynamic seal

Without a shaft connection there is no rotating seal to wear — the source of a common leak and failure point.

Quieter and compact

The disc motor gives 10 % lower noise than radial-flux motors in a smaller, lighter package.

Long service life

20,000 h service life with 50 % less volume and 60 % less weight, under 4 kg complete.

Note
KG300 and KG500 integrate the pump and controller in one housing; the remaining models use a separate controller. Fix the pump to the system housing or a bracket with 6 × M6 bolts at 15 ± 2 N·m.