Fuel Cell Cooling Circulation Pump

Seal-less brushless coolant pump for fuel-cell cooling loops

A seal-less canned-motor coolant pump for fuel-cell cooling circuits. Nine models from 900 W to 4500 W, rated up to 600 L/min at 32 m head, with CAN 2.0B control, multi-protection and an insulated medium design compatible with fuel-cell coolant.



EPH900L-00



EPH2500H-D4



EPH4500H-00

Seal-less canned-motor design

Zero leakage — no shaft seal to wear or fail in the coolant circuit.

Brushless PM motor

High-efficiency permanent magnet motor with optimised hydraulics for superior performance.

CAN 2.0B control

Real-time speed and fault feedback for full system integration.

Multi-protection

Dry-run, locked-rotor, over-temperature and over-current protection as standard.

Long service life

≥ 15,000 hours with low noise, and an IP67 rating resistant to dust, water and vibration.

Model selection

Model	Rated power	Rated flow & head	Rated voltage	Max. flow	Max. head	Noise	Comm.	Protection
EPH900L-00	900 W	165 L/min @ 15.2 m	345 V DC	210 L/min	18.9 m	≤ 60 dB(A)	CAN 2.0B	IP67
EPH900H-35	≤ 900 W	165 L/min @ 12.5 m	410–750 V DC	210 L/min	18.9 m	≤ 60 dB(A)	CAN 2.0B	IP67
EPH1500H-00	1500 W	210 L/min @ 22 m	550 V DC	330 L/min	27 m	≤ 68 dB(A)	CAN 2.0B	IP67
EPH2500H-00	2500 W	260 L/min @ 24 m	550 V DC	330 L/min	30 m	≤ 70 dB(A)	CAN 2.0B	IP67
EPH2500H-D4	2500 W	360 L/min @ 17 m	800 V DC	400 L/min	30 m	≤ 70 dB(A)	CAN 2.0B	IP67
EPH2500H-95	2500 W	260 L/min @ 24 m	550 V DC	330 L/min	30 m	≤ 70 dB(A)	CAN 2.0B	IP67
EPH2500H-C3	**2500 W**	**Custom**	**Custom**	**Custom**	**Custom**	**≤ 70 dB(A)**	**CAN 2.0B**	**IP67**
EPH4500H-00	4500 W	600 L/min @ 24 m	550 V DC	660 L/min	32 m	≤ 72 dB(A)	CAN 2.0B	IP67
EPH4500H-56	**4500 W**	**Customized**	**410–750 V DC**	**Customized**	**Customized**	**≤ 72 dB(A)**	**CAN 2.0B**	**IP67**

Models in blue offer customisable flow, head and voltage options.

Key technical points

Seal-less canned motor

The motor and pump share a common housing, so there is no rotating seal and no leakage path through the motor.

Optimised hydraulics

Impeller and flow path are designed for the coolant duty of fuel-cell stacks, giving high efficiency at low noise.

Insulated medium design

Wetted parts are electrically insulated, so the pump can run directly with fuel-cell coolant without extra isolation.

Wide voltage range

345 V, 410–750 V, 550 V and 800 V DC supply options cover low-voltage and wide-bus systems alike.

Application

The pump circulates coolant through the fuel-cell stack, radiator and heat-exchanger loop. The 900 W and 1500 W models suit passenger and light-commercial vehicle stacks, while the 2500 W and 4500 W models cover heavy-duty vehicles and larger stationary systems. Because the medium is insulated and the design is seal-less, the same unit fits glycol- and water-based coolant loops without modification.

Design, application and selection notes

Product description

The circulation pump drives coolant through the fuel-cell stack, radiator and heat-exchanger loop. A seal-less canned-motor design removes the shaft seal entirely, so the coolant circuit stays closed and no coolant is lost through the motor. The medium wetted parts are insulated, so the pump is directly compatible with fuel-cell coolant and needs no additional isolation. An integrated controller handles speed regulation over CAN 2.0B and reports fault conditions back to the vehicle or system controller.



EPH900L-00



EPH2500H-D4



EPH4500H-00

Series grouping

The 900 L / H and 1500 H cover low-power stacks; the 2500 H and 4500 H serve commercial vehicles and larger stationary systems.

Series	Power	Voltage	Flow
900 L / H	900 W	410–750 V	165 L/min
1500 H	1500 W	550 V	210 L/min
2500 H	2500 W	550 / 800 V	360 L/min
4500 H	4500 W	410–750 V	600 L/min

Protection and features

Multi-protection

Dry-run, locked-rotor, over-temperature and over-current protection are built in as standard.

CAN 2.0B

Real-time speed and fault feedback over CAN 2.0B for integration with the system controller.

Insulated medium

The medium-wetted design is directly compatible with fuel-cell coolant.

IP67

Sealed against dust, water and vibration, rated for underbody and engine-bay installation.

Selection notes

Match the duty point

Select on the rated flow and head at the operating point, not on maximum values — the maximum flow and head figures are reached at different conditions.

Check the supply voltage

Supply options range from 345 V to 800 V DC, and the 410–750 V and 900 H variants cover wide-bus systems.

Use the customised models

EPH2500H-C3 and EPH4500H-56 are built to the customer's flow, head and voltage specification.

Technical specification

Pump type	Seal-less canned motor, brushless PM	**Supply voltage**	345 / 410–750 / 550 / 800 V DC
Rated power range	900 W – 4500 W	**Noise**	≤ 60 – 72 dB(A) @ 1 m
Rated flow	165 – 600 L/min	**Communication**	CAN 2.0B
Rated head	12.5 – 32 m	**Protection grade**	IP67
Maximum flow	210 – 660 L/min	**Service life**	≥ 15,000 hours
Maximum head	18.9 – 32 m	**Medium**	Insulated, fuel-cell coolant compatible

Note

Noise is measured at 1 m from the pump. Duty points for a specific stack size and cooling requirement are confirmed on request, together with the matching model number and installation drawing.