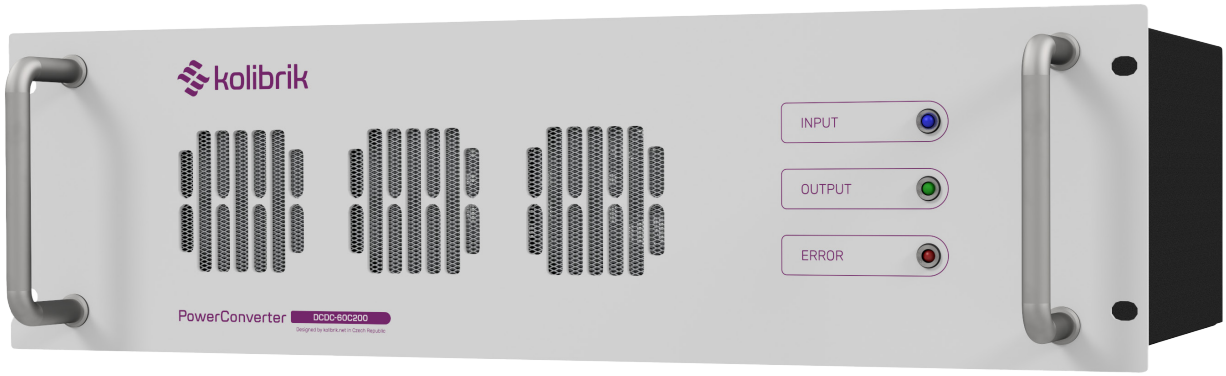
Datasheet

kolibrik

DCDC-S Family

Modular DC/DC converter solution for stacks up to 90 V

DCDC-S



Product description

DCDC-S Family is a modular solution for power DC/DC conversion developed specifically to address wide ranges of varying key parameters of hydrogen fuel cell and electrolyzer applications. This solution is based on modules that can be parallelized in required count. DCDC-S converters can be digitally controlled or monitored.

DCDC-S allows constant voltage control and constant current control or limitation. That is ideal for applications where a system battery is used, so the output can change modes according to battery charge status and application power demands. Current control feature can be used also for parallelization of more hydrogen fuel-cell sources, where each source can be enabled individually and can contribute with a different current or power.

We provide DCDC-S models with custom-specified parameters, with different cooling and mechanical setups, or with complete development services for custom projects and series production.

For detailed specifications of a solution for your project, please contact us and specify your key parameters – voltage and current range of input and output, preferred cooling, controller demands, application-specific parameters, etc.

Technical Parameters

Topology	Buck-boost (step-up & step-down)
Isolation	Non-isolated
Input voltage	9 ... 90 V
Output voltage	0 ... 90 V
Modularity	1 ... 20 modules in parallel (virtually unlimited number)
Power	1 ... 2 kW per module (depends on max. current per module)
Efficiency	Up to 97 %
Cooling	Air or water
Output control	Constant voltage – standard power supply mode Constant current – for battery charging or stack parallelization
Controller	Analog – fixed output settings Digital – control by digital communication (RS485, CAN, ...) – compatible with KMS – Kolibrik.net modular system

Available variants

Stand-alone DC/DC converter with fixed output settings
Digitally controlled DC/DC converter
Open-frame setup for integration into systems
Stand-alone modules for custom solutions
Complete custom-developed solutions for mass production

Applications

Fuel-cell stack output power conversion for application power (e.g., fixed 24 V or 48 V output)
Ballance of plant (BoP) power supply
Intelligent conversion for application with battery in peak-shaving setup – const. V/I mode depending on battery charge status and application power consumption
Parallelization of more fuel-cell power sources – each source can contribute with different power
Electrolyzer power supply with current control and voltage limitation
Pre-convertors for 3rd-party industrial converters and inverters that have improper input voltage range for direct connection to fuel-cell stacks Example: H2FC stack (35 ... 72 V) → DCDC-S converter (output 48 V) → inverter 48 VDC / 230 VAC