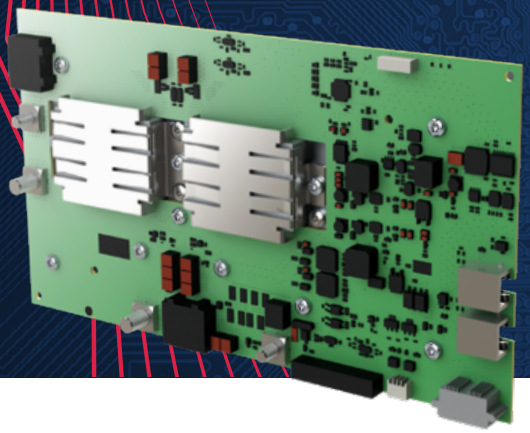
DEVELOPMENT PROJECT

KOSTAL

KOSTALize your power



KOSTAL DC/DC Converter

LV DC/DC Buck-Boost Converter (2.1kW)

More than E²MS - Your specialist for complex customer

KOSTAL Electronic Solutions is your partner for control and power electronics - made in Germany. Benefit from the established development, quality and production technologies of the KOSTAL Group with over 110 years of experience. Discover our broad product portfolio for power electronics. In addition to on-board chargers and wallboxes for electromobility and inverters for PV systems, we also offer high-performance DC/DC converters for fuel cell applications.

The KOSTAL LV DC/DC Buck-Boost Converter is the innovative solution for demanding applications. With the innovative impedance measurement, the converter supports the predictive maintenance of the fuel cell. The optional cooling plate and throttleable system power contribute to the cost reduction of the entire application system and can be customised according to your needs.

Predictive maintenance
The impedance measurement allows the condition of the fuel cell to be monitored and carried out in good time before a failure for greater system reliability.

Current setpoint specification via Modbus
RS485 interface with Modbus RTU enables setting & adjustment of the desired current value via external control and secure data transmission.

Customised performance
The required system output can be throttled at the factory to meet individual requirements or alternatively achieved by synchronised parallel operation of several converters.

Large selection of features

- Converter topology: Buck-Boost converter
- Wide input/output voltage range
- Synchronised parallel operation of several converters
- Throttling of the system output as required
- Scalability from 1 to 5 devices (up to 10.5 kW)
- Predictive maintenance through impedance measurement of the fuel cell
- Thermal monitoring and power control
- Communicative thanks to RS-485 and CAN (optional)
- Extended communication via Modbus RTU
- Preset standard parameters
- Simple integration into customer system
- Can be integrated into 19-inch enclosure systems
- Simple, individual configuration
- Fast commissioning
- Compatible with all LV battery systems (up to 60 V)
- Battery reverse polarity protection and battery clamp protection

The heat sink is optional for the KOSTAL LV DC/DC Buck-Boost Converter, but can be specified according to individual customer requirements.

Technical Data

KOSTAL LV DC/DC Buck-Boost Converter		
System data	Nominal power	2.1 kW (Reduction to 0.75 kW possible)
	Input voltage range [V_{DC}]	10 - 60
	Input current range [A_{DC}]	0 - 70
	Output voltage range [V_{DC}]	18 - 60
	Output current range [A_{DC}]	0 - 40
	Peak efficiency (fuel cell 30 V, 48 V Bat)	97.5 %
	Topology	Buck-Boost Converter
	Scalable modules	1 to 5 (to 10.5 kW)
	Cooling	Optional standardised heat sink, can be integrated into application systems with air cooling and water cooling
Functions	Fuel cell power ramp	Yes
	Synchronised parallel operation of several converters	Yes
	Automatic master / slave detection	Yes
	Update via bootloader	Yes
	Autonomous operation via digital IO	Yes
	Fully configurable via a dedicated parameterization tool	Yes
	Compatible with all LV battery systems < 60 V	Yes
Protective functions	Fuel cell: undervoltage, overcurrent	Yes
	Battery: overvoltage/undervoltage, overcurrent	Yes
	Reverse current detection	Yes
	Power limitation	Yes
	Thermal monitoring and power regulation	Yes
	Battery clamp protection	Yes
	Battery reverse polarity protection (if battery voltage and stack voltage < 80 V)	Yes
	Impendance measurement	Yes
Ambient conditions	Ambient temperature [°C]	-20 to +60
	Storage temperature [°C]	-40 to +80
	EMC	Prepared for DIN EN 61000-6-1, DIN EN 61000-6-2, DIN EN 61000-6-3, DIN EN 61000-6-4 Observe dependence on customer application.
	Installation height	Up to 5,000 m
	Relative humidity	Up to 95 % - condensation not permitted
Mechanics	Dimensions L x B x H in mm (without heat sink)	275 x 15 x 22
	Weight (without heat sink)	1.2 kg
	Ingress protection code	IP 00
Comm.	Communication interface	RS-485
	Communication protocol	Modbus RTU, CAN, SPF (proprietary)
	Human-Machine-Interface	LED status indicator
Misc.	Project type	Development project
	Availability	Q3/2025 (C-sample)

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