

CESUR COMPLETE SOLUTION

COMBINED POWER UNIT FOR HYBRID LOCOMOTIVES



Product Description

ASELSAN's CESUR Series is a family of power converters in different power/voltage levels developed based on a unique technology platform for railway vehicles.

CESUR Complete Solution includes a highly intelligent embedded control system, high performance traction inverters, auxiliary converters, and an energy storage system. CESUR Complete Solution is suitable with either permanent magnet synchronous or induction motor. CESUR Complete Solution with its new IGBT and SiC MOSFET technology, and advanced control algorithms provides safe, reliable and efficient operation.

ASELSAN's embedded control system is the optimized solution for demanding railway applications, real-time control tasks for power converters, and severity of train communication networks such as MVB, Ethernet, RS485 and CANOpen.

Typical Applications

- Hybrid Shunting Locomotives
- Full Electric Shunting Locomotives

Product Features

- Control of single or two parallel connected traction motors
- High performance drive using vector control algorithm even at low speeds
- Efficient switching methods
- Dynamic braking (regenerative)
- User selectable torque/speed control mode
- Integrated Traction Control Unit and flexible algorithm development architecture
- MVB, Ethernet and CANopen interface options
- Encoder/Resolver interface
- Analogue inputs and discrete I/Os
- Overvoltage, overcurrent and overtemperature protection
- Passive discharge
- Galvanic isolation between HV and LV
- Fully automated self-test at start-up
- Railway qualified components
- Complies with EMC requirements
- High IP protection

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Technical Specifications

Traction Inverter

- Operating Input Voltage Range : 600-1000 VDC
- Rated Input Voltage : 750 VDC
- Output Voltage : 0-530 VAC
- Peak Power (30 sec) : 600 kW
- Rated Power : 400 kW
- Torque Bandwidth : 200 Hz
- Control Voltage Range : 24 VDC
- Auxiliary Input Voltage Range : 380-480 VAC 3Ø

Buck&Boost Converter

- Operating Input Voltage Range : 600-1000 VDC
- Rated Input Voltage : 750 VDC
- Rated Current : 500 A
- Peak Current : 700A, (250kW@500V, 350kW@700V)
- Control Voltage Range : 24 VDC
- Auxiliary Input Voltage Range : 380-480 VAC 3Ø

Auxiliary Power System

- Operating Input Voltage Range : 600-1000 VDC
- Rated Input Voltage : 750 VDC
- Output Voltages : 1x230 VAC, 3x400 VAC, 24 VDC
- Output Frequency : 50 Hz
- Rated Power : 5kVA, 125kVA, 10kW
- Control Voltage Range : 24 VDC
- Auxiliary Input Voltage Range : 380-480 VAC 3Ø

Thermal & Mechanical Data

- Cooling Type : Liquid cooling
- Weight : 1500 kg
- Operational Temperature : -25 °C / +70 °C
- Storage Temperature : -40 °C / +85 °C
- Dimensions : 2450x1700x638 mm

Standards

- Electrical: EN 50155, EN 50163, EN 50124-1, EN 50124-2, EN 50388, EN 61287-1, EN 61377-3, EN 50343, EN 62864-1, CLC / TS 50535
- Fire: EN 45545
- Mechanical: EN 61373
- Electromagnetic Compatibility (EMC): EN 50121-3-2

