EPEC CORE UNIT

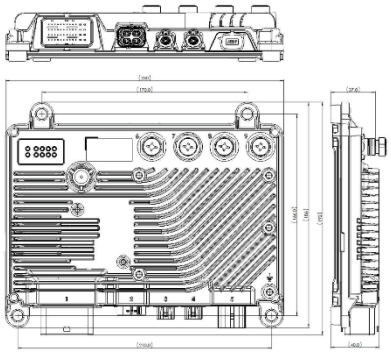
ONE PAGER CORE

Epec Core Unit is a powerful central control unit designed for demanding mobile machinery applications. It combines high-performance computing, real-time machine control and functional safety support in one rugged platform.
By centralizing machine intelligence, Epec Core Unit helps OEMs simplify system architectures, reduce integration complexity and develop scalable control solutions for next-generation machines.



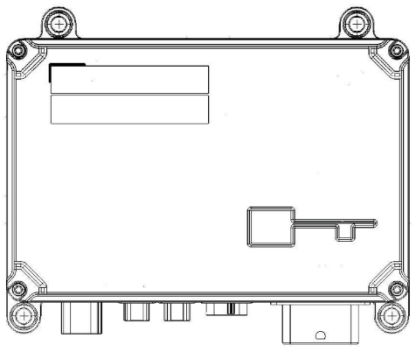
Key Benefits:

- **Centralized machine intelligence:** Simplify machine architectures by integrating multiple control functions into one powerful platform.
- **High-performance computing:** Enable demanding control applications, real-time data processing and edge computing.
- **Functional safety support:** Combine safety-related and non-safety functions in one system architecture, with support up to SIL 2 / PL d.
- **Flexible system integration:** Connect ECUs, sensors and displays through versatile CAN and Ethernet interfaces.
- **Cybersecurity by design:** Support the development of machine control systems that meet EU Cyber Resilience Act (CRA) requirements.
- **Rugged and reliable:** IP67-rated design for demanding mobile machinery environments.



Accelerated Time to Market:
Epec offers a set of pre-certified safety libraries and software tools to optimize machine development, helping customers bring their products to market faster and more efficiently.

Core unit is engineered to deliver performance, reliability, and flexibility, making it the perfect solution for advanced control systems in industrial applications.



Cybersecurity:

- **Information Security:** Epec is certified according to ISO/IEC 27001, demonstrating its commitment to internationally recognized information security management practices.
- **Cyber Resilience Act (CRA):** Epec Core Unit can be used to develop machine control systems that meet EU Cyber Resilience Act requirements.
- **Secure System Development:** Customers can benefit from Epec's control system and software development services, where cybersecurity is considered throughout system design and development.

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TECHNICAL FEATURES

Functional safety: Up to SIL 2 (IEC 61508) and PL d / Cat. 3 (ISO 13849-1). The main x86 unit is non-safety; safety functions run on the dedicated Functional Safety Unit.

Processor: Intel® Elkhart Lake quad-core CPU, 4 × 1.9 GHz (Intel Atom® x6425RE) + dedicated 32-bit safety MCU, 254 MHz

Flash memory: 64GB

RAM: 16GB

Nominal supply voltage: 12/24 V systems, 8–32 V DC

CAN: 6 × CAN 2.0B. All CAN interfaces support CANopen and SAE J1939; CANopen Safety and SAE J1939 Functional Safety are available for safety-related communication

Ethernet: 8 Ethernet connections in total: 5 × 100Base-T1, 1 × 100Base-TX and 2 × 1000Base-T

Additional interfaces: 1 × USB 3.0; RS-232

I/O: 16 I/O pins total: 8 outputs + 8 inputs

Protection class: IP67

Operating temperature: -40 ... +65 °C / -40 ... +149 °F

Storage temperature: -40 ... +85 °C / -40 ... +185 °F

Dimensions: 230 × 192 × 40 mm, without mating connectors

Weight: approx. 2 kg

Housing: Aluminum

Connectors: 1 × Molex CMC 48-position, 2 × M12 X-coded, 2 × M12 D-coded, 1 × H-MTD Quad, 2 × H-MTD Single and 1 × Molex HS Autolink II

Programming: CODESYS 3.5, C-programmable with SDK and Epec MultiTool for CPU and CODESYS 3.5 and MultiTool for Safety MCU

Diagnostics: 2 × signal LEDs, 8 × communication status LEDs, supply-voltage monitoring, internal-temperature monitoring, internal-voltage monitoring, and CAN/Ethernet network monitoring

Protection functions: Overvoltage protection, output short-circuit protection and over/under-temperature protection

APPROVALS

Symbol / Name	Explanation
CE	This product complies with the requirements set in the CE Standard.
EU declaration of conformity	This device is in compliance with Machinery Directive 2006/42/EC

VARIANTS & MANUALS

Ordering code	E300CORE1-01-DD11
Technical Manual ID	MAN001085
Safety Manual	MAN001087
Programming Manual	MAN000537
Device Manager Manual	MAN001090
Cybersecurity Guide	MAN001088
CAN	6
Ethernet	8
RS-232	1
USB	1
Status LED	Yes
Outputs	8
Inputs	8

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YOUR CHALLENGE, OUR INSPIRATION.

EPEC