EPEC SC4X CONTROL UNIT

The Epec SC4X is a compact and powerful controller designed for distributed control systems in off-highway machines and non-road vehicles. It meets the highest requirements for functional safety, lifecycle cost optimization, and robust performance in extreme environments making it ideal for demanding applications in off-highway machines and non-road vehicles.

Key Benefits:

- **Versatile Programming**: Distributed systems, offering seamless integration with machine control systems.
- **Advanced Communication**: Enables fast and reliable data exchange with support for various communication protocols, ensuring real-time responsiveness.
- **Durable Design**: Built to endure harsh environments, with compact input/output options to support complex configurations.
- **Simplified Configuration**: Compatible with Epec's MultiTool software for easy configuration, diagnostics, and simulation, reducing setup time.
- **Functional Safety**: Designed to meet the highest safety standards, supporting secure and reliable operation.

Part of the SL8X Platform:

The SC4X Control Unit is part of Epec's SL8X modular platform, which provides versatile solutions for functional safety and control. While the SC4X is a CODESYS-based controller, the broader SL8X platform also includes products such as C programmable controllers, CANopen safety responders, and Ethernet safety responders. This modular approach ensures customers can select the right solution for their application, with broad customization and scalability options. Learn more about the Epec SL8X platform.

Integration Notes:

- **Proportional Valves:** Suitable for proportional control where dither and integrated current measurement are not required. For advanced control with dither or current feedback, pair with an external driver.
- **System Voltage:** HS/LS outputs are available only in +12 V systems.

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.

SC4X is engineered to deliver performance, reliability, and flexibility, making it the perfect solution for advanced control systems in industrial applications.

Virtual Development Tools:

With the Epec MultiTool Simulator, a virtual version of the SC4X Control Unit is available for development and testing without physical hardware. This reduces prototyping costs, speeds up design cycles, and enables automated testing for greater efficiency.

Cybersecurity:

- Epec is certified with ISO/IEC 27001, ensuring compliance with international information security standards.
- Customers can utilize Epec's control system and software development services, which consider cybersecurity as a key aspect.

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TECHNICAL FEATURES

Processor: 32-bit CPU, 3-core, 258 MHz

Memory:
Flash memory: 8 Mbyte
RAM memory: 1,5 Mbyte
Non-volatile memory: 16 kbyte
Customer application size: 1,8 Mbyte

Power: Nominal supply voltage 12/24 VDC systems (8 ... 32 VDC)

REF Voltage outputs: +5 V

Protection functions: Overvoltage protection, Short-circuit protection for outputs, internal diagnostics

Functional safety: IEC 61508 and IEC 62061, SIL 2 & ISO 13849, PL d / Cat. 3

Low power mode: Stand-by mode power consumption 1 mA, KL15 wake-up, CAN wake-up

I/O: 32 (16 inputs + 16 outputs)

IP class: IP69k

Temperature range: -40 ... + 85 °C / -40 ... +185 °F

Connectors: LEAVYSEAL 46 pin

Programming: CODESYS V3 Safety SIL 2 programming 3.5 (SP19), MultiTool

Supported protocols: CANopen, CANopen Safety, SAEJ1939, SAEJ1939 Safety

CANopen Safety protocol for safety-related communication according to EN50325-5

Extensive set of pre-certified libraries for safety related applications

Diagnostics: RGB LED, Supply voltage, Unit temperature, REF voltage monitoring

Epec MultiTool Simulator support

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	E300SC4X1-02-DD11
Technical Manual ID	MAN000916
CAN	2
5 V / 10 V REF	1
PWM / DO	16
AI / DI	10
AI / DI / PI	6
CODESYS version	3.5 SP19
Coating	Non-painted

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