Make machine data readable

With our controller family, we link worlds: from Sensor2 Cloud, Machine2Machine or production line to human.

Set no limits to your automation and discover our solutions for:

- Your hardware requirements
- Your individual controller design (also white label, brand label)
- Your ready-to-use, pre-assembled solution

Our controllers at a glance

- sysWORXX CTR-100 - smart IoT controller
- sysWORXX CTR- series - the basis for your control design
- sysWORXX CTR-500 - compact & powerful
- sysWORXX CTR-700 - compact control for all requirements
- sysWORXX CTR-710 - efficient pre-assembly
- sysWORXX CTR-750 - smart advanced connectivity
- sysWORXX CTR - adapts to your hardware requirements
- sysWORXX CTR - as a pre-assembled solution

The sysWORXX CTR-700 control solution can be applied as an Edge controller, Linux computer, IoT gateway, and IoT coupler for climate data acquisition, asset tracking, energy monitoring, device management, etc. As freely-programmable, open-source device, it can be programmed via IEC 61131-3 as well as in various high-level languages (C/C++, C#/.Net, Node-RED, Java, and Python). The controller can be adapted to customer's requirements both optically (white label) and in terms of content.

Benefits

- Support of high-level languages (execution of IEC 61131-3 PLC programs and other Linux applications)
- CANopen interface (incl. CANopen manager service for integration of other CANopen modules)
- Independent Ethernet interfaces for a safe separation of enterprise IT and shop floor OT
- MQTT and OPC UA support
- Support of communication and data exchange via Modbus
- Shielded backplane extension bus (for mesh networks)
- Suitable for DIN-rail mounting

Technical details

- Size: 60 mm x 162 mm x 91 mm (height, width, depth)
- Temperature: 0 °C to 55 °C
- Humidity: 10 % to 95% non-condensing (VDE 0110)
- CPU: NXP i.MX 7 processor, dual Cortex-A7 processor core
- MPU speed: 1000 MHz
- MIPS: 3800
- Real time clock (RTC)
- Temperature sensor
- Memory: 1024-MiB RAM, 8-GiB eMMC storage

Software

- Basic Installation: Linux OS (Debian Linux, Jessie 8.10), I/O drivers, Node-RED with nodes for I/O drivers, OpenJDK & Mono
- Additional licenses: OpenPCS RT, OPC UA server for OpenPCS
- Optional third-party software: downloadable via Debian OS repositories

Connectivity

- Two CAN interfaces (CANopen, CAN layer 2)
- Two Ethernet interfaces (Secure separation of IT & OT)
- Three serial interfaces: EIA-485 Modbus, EIA-232
- USB host
- SD card
- Linux console (version as USB or EIA-232)
- Cloud-prepared for use with cloud providers such as IBM Watson

I/O Interfaces

- 16 digital inputs: 24 V_{DC} (data galvanically decoupled)
- 16 digital outputs: 24 V_{DC}, 0,5 A
- A/B encoder (alternate function for digital input and high-speed counter)
- High-speed counter (alternate function for digital input and A/B encoder)
- Two PWM (alternate functions depending on used PWM channel)
- Two relays: 230 V_{AC}, 1 A
- Four analog inputs (configurable: 0 V_{DC} to 10 V_{DC}, 0 mA to 20 mA, 4 mA to 20 mA)

Controls

- Switch: Run-/stop, config, reset, boot
- Status LEDs: Power CPU, power periphery, run, error, and more
- Service access: SFTP/SSH

Mesh net with Wirepas

Via the backplane expansion bus, the sysWORXX CTR-700 can be integrated into mesh networks using company's extension module. A partner's software Wirepas Connectivity is used for this solution. Due to the hardware-independent technology, the protocol runs on every wireless chip. The mesh net solution allows customers to run the network on batteries for up to 5 years. The connection solution can be optimized for the application in terms of performance, bandwidth, range and latency.

Remote access and remote control with TeamViewer IoT

With the new TeamViewer IoT-integration for the sysWORXX CTR-700 one can access connected devices and make any necessary adjustments from anywhere and at any time. All TeamViewer versions use full encryption according to the same security level as https/SSL (based on 2048-bit RSA private/public key exchange and 256-bit AES session encoding) and is considered completely safe by today's standards. The key exchange also

guarantees that the data transfer is completely encoded from client to client and that any routers or servers in between (including our routers) are unable to read or analyze the data stream.

[Further use cases](#)

If required, the CTR-500 control solution provides high connectivity, including Mesh net and WiFi, but less industrial IO interfaces on less space.

CANopen Chip CoC-100

Like its predecessor, the sysWORXX CANopen Chip F40, the new sysWORXX CANopen Chip CoC-100 is a fully operational plug-in module with pre-programmed CANopen firmware. The integrated standard DIP-40 connector forms the interface to the target hardware. With up to 7 I/O configurations, it provides a selection of usable digital inputs and outputs, analog inputs, and PWM outputs. The on-board configuration options allow a flexible module configuration.

The chip is a CANopen device providing the CANopen NMT (network management) server functionality according to the CANopen communication profile CiA 301 v. 4.2.0. It was tested with the CiA Conformance Test Tool. Additionally, the chip supports the CANopen device profile for I/O modules CiA 401 v. 3.1.0. LEDs show the device status according to the CiA 303-3 v. 1.4.

Features

- Future-proof use by using the NXP S32K142 CAN controller
- Can be used in 5-V or 3,3-V operation
- Higher AD converter accuracy of 12 bit (compared to 10 bit for F40)
- CANopen bootloader for firmware update via CAN

Advantages

- New powerful CPU NXP S32K142 (more CAN buffers)
- Integration of layer setting services (LSS) according to CANopen CiA 305
- Analog inputs with higher resolution: 12 bit (compared to 10 bit for F40)
- Design optimized in terms of production technology
- The CPU is available as pre-programmed chip for customer-specific design-in under the designation
- Cost-effective communication interface

Contact

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Features

No features listed.