Data sheet CODESYS Control for Raspberry Pi MC SL

CODESYS Control for Raspberry Pi MC SL is an adapted CODESYS Control runtime system for Raspberry Pi with more than one core on a single CPU.

Product description

CODESYS Control for Raspberry Pi SL contains a multicore capable CODESYS Control runtime system for all Raspberry Pi models whose CPU has multiple cores, including compute modules (see http://www.raspberrypi.org/), as well as their possibility to use expansion hardware such as Raspberry PiFace Digital, Raspberry Pi Camera and various devices/boards with SPI, I²C or 1-wire interface.

After the installation of the runtime environment, the Raspberry Pi can be programmed as PLC with the CODESYS Development System.

This product can be installed with the included CODESYS Deploy Tool plug-in via the CODESYS Development System on the Raspberry Pi's Linux system. After each restart the runtime system will be started automatically. If no valid full license can be found, CODESYS Control runs for two hours without functional limitations before shut down.

Detailed information can be found in the Online Help.

Benefits

- Extended version of CODESYS Control for Raspberry Pi SL including multicore support (all CPUs)
- Extension of the CODESYS Development System for binding individual IEC applications to different CPU cores
- Debugging of the multicore application within CODESYS

Interfaces

- CODESYS OPC UA Server, as full version for data exchange
- CANopen via EL6751 Gateway

The CODESYS device description does support the following components:

- Raspberry Pi Camera
- I²C interface, with SenseHat, SRF02, Adafruit PWM, MPU6050 Gyro, MPU9150 Gyro, AK8975 Compass
- SPI interface, with MCP3008, MCP23S17, PiFace Digital, PiFace Control Display
- One-wire interface, with DS20B18
- GPIO

Visualization

- CODESYS WebVisu, is included as full version in the delivery of the runtime package.

SL Extension

The SL Extension Package is included in the Runtime Package and offers additional functions:

- Integration of existing C code
- Implementation of external functions
- Support of start/stop switches
- Usage of local I/Os
- Use of external event tasks
- Connect persistent memories (Retains)

Fieldbus support

With the delivery of the Runtime Package the following fieldbuses are supported:

- CODESYS CANopen Manager / Device
- CODESYS EtherCAT Master
- CODESYS EtherNet/IP Scanner / Adapter
- CODESYS J1939
- CODESYS Modbus TCP Master / Slave
- CODESYS Modbus Serial Master / Slave
- CODESYS PROFINET Controller / Device

Product options

Further products can be licensed for a fee:

- CODESYS BACnet SL
- CODESYS KNX SL
- CODESYS SoftMotion SL
- CODESYS SoftMotion CNC+Robotics SL

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General information

Supplier:

CODESYS GmbH
Memminger Strasse 151
87439 Kempten
Germany

Support:

Technical support is not included with this product. To receive technical support, please purchase a CODESYS Support Ticket.

https://support.codesys.com

Item:

CODESYS Control for Raspberry Pi MC SL

Item number:

2302000032

Sales/Source of supply:

CODESYS Store
https://store.codesys.com

Included in delivery:

- Package for the CODESYS Development System including CODESYS Control, license agreement, online help and device description
- License Key
- CODESYS Deploy Tool (AddOn for the CODESYS Development System)

System requirements and restrictions

Programming System	CODESYS Development System V3.5.17.0 or higher
Supported Platforms/ Devices	• Raspberry Pi 2 • Raspberry Pi 3 / Compute Module 3 • Raspberry Pi 4 / Compute Module 4 Note: Use the tool “Device Reader” to find out the supported features of your device (free of charge component of CODESYS Development System).
Additional Requirements	• The CODESYS Control requires a network interface (LAN, WLAN), especially with the Raspberry Pi Compute Module and the Raspberry Pi ZERO.

	• If the product is used for industrial purposes, it is the responsibility of the system manufacturer to ensure compliance with the necessary specifications. • The operating system Raspberry Pi OS (32-bit) https://www.raspberrypi.org/downloads/ • Dynamic libraries needed by the CODESYS Control Runtime binary: ◦ libm.so.6 ◦ libpthread.so.0 ◦ libdl.so.2 ◦ librt.so.1 ◦ libc.so.6 ◦ libgcc_s.so.1
Restrictions	• The runtime system does not have real-time behavior. Its Jitter depends on many factors, especially on parallel executed Linux applications, and is ideally approximately 50 µs with maximum values of approximately 400 µs. • Not released for use in containers or virtual machines (VMs)!
Licensing	 Single device license: The license can be used on the target device/PLC on which the CODESYS runtime system is installed. Licenses are activated on a software-based license container (soft container), which is permanently connected to the controller. Alternatively, the license can be stored on a CODESYS Key (USB dongle). By replugging the CODESYS Key, the license can be used on any other controller. Note: In demo mode, the software runs for two hours without a license. After that, a manual restart is required.
Required Accessories	• SD-card (minimum 4GB) • Optional: CODESYS Key

Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.

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