

mxAutomation library for KUKA



Programming of KUKA robots, PLCopen certified.

The available function block library enable the programming, diagnosis or manual movements of KUKA robots via FB blocks of the PLC.

The product - including runtime on the robot controller - can be ordered from KUKA robotics under "KUKA.PLC mxAutomation 2.1" order number: 00-279-817.

→ This version is suitable for the KUKA System Software V8.5

Product Description

The library brings nearly all programming commands of the KUKA language into the PLC. Existing option packages, e.g. KUKA.ConveyorTech or KUKA.VectorMove, can be addressed via the FBs of mxAutomation. PLCopen compliant FBs allow easy application.

The download contains four identical projects, each with a different fieldbus connection to the robot. (Profinet, Ethernet/IP, EtherCAT and UDP)

Range of Functions

Possibilities of the library:

- Control up to five robots simultaneously
- Jogging and TouchUp
- Linear movements (LIN)
- Point to point movements (PTP)
- Circular movements (CIRC)
- Approximate positioning
- Path-related switching actions
- Functions for interrupt programming
- Configuration, diagnosis and use of the workspaces
- Write and read bases, tools and the actual position
- Change and monitor Cartesian workspaces
- Start brake and mastering test
- Use of existing KRL programs using additional system variables
- ...

Conveyor Tech

Synchronize robot movements with linear or circular movements of an conveyor belt

Vectormove

Move the Robot by an externally acting force along a defined vector in the Cartesian space.

Commissioning and maintenance

- Manual operation with KUKA-SmartPAD as well as with our jog function block possible
- Read all error messages from the robot in plain text (Message handler KRmsgNET)
- Automatic language switching for error messages is possible

Safety functions:

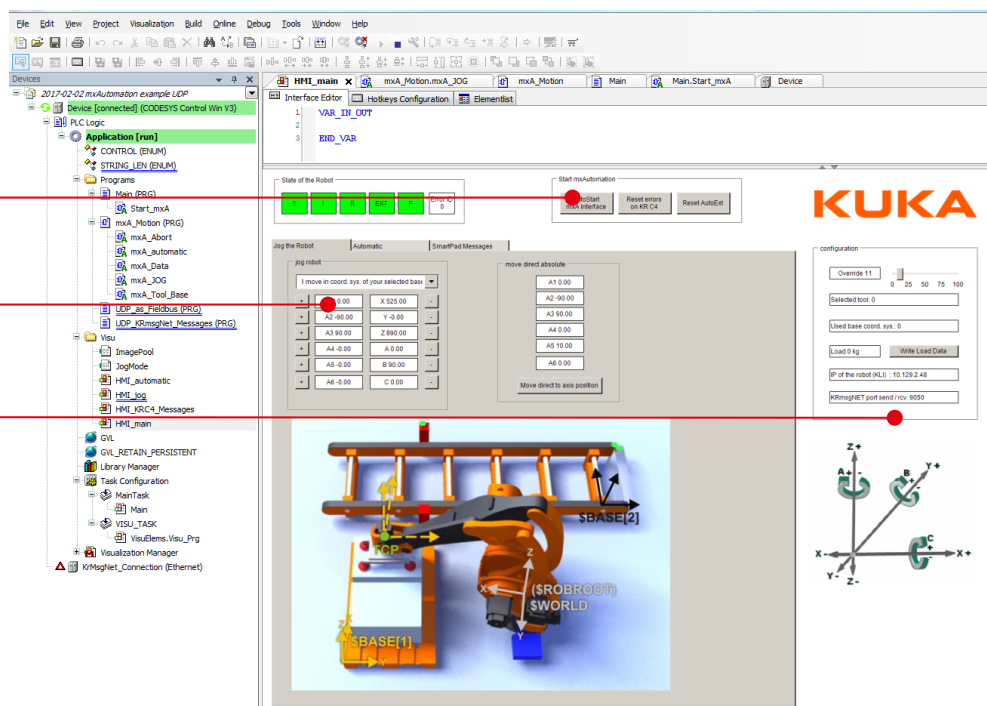
- Profisafe or CIPSafety or FsoE or parallel wired
- Full compatibility with KUKA.SafeOperation and all other KUKA safety features.

HMI

Start the mxA-communication
Reset Errors

Jog the Robot

Configure the Tool/Base
Set the IP-Address



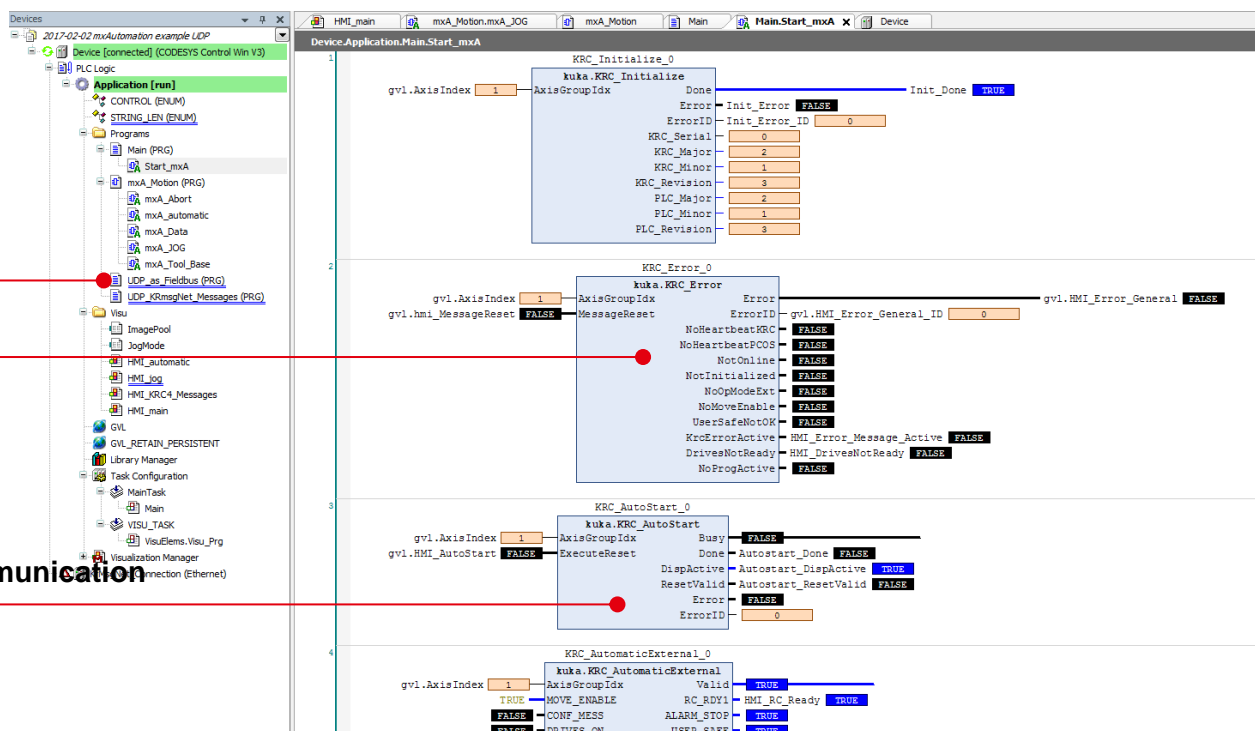
Beispielprojekt für eine einfache Anwendung von mxAutomation

Simple application to understand the basic functionalities

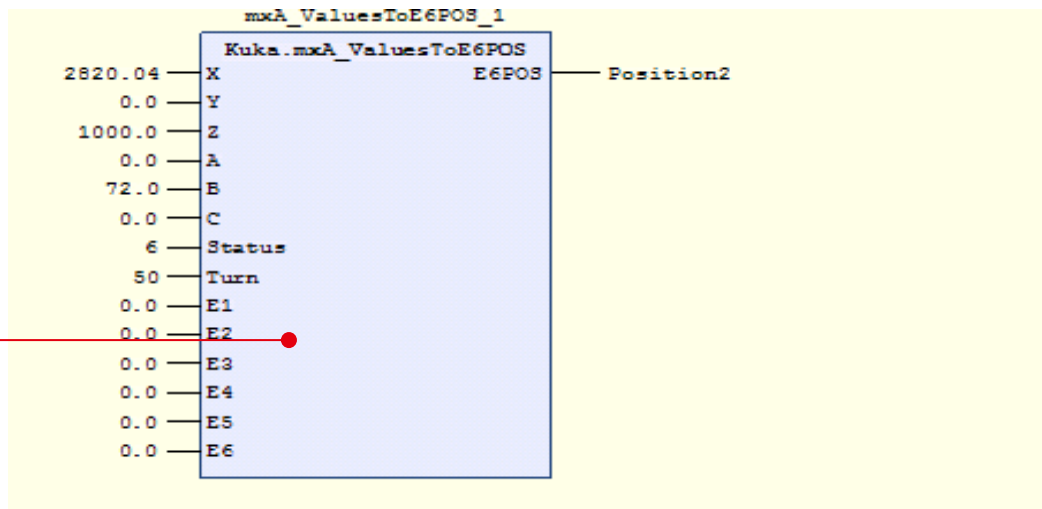
UDP-

Quit errors

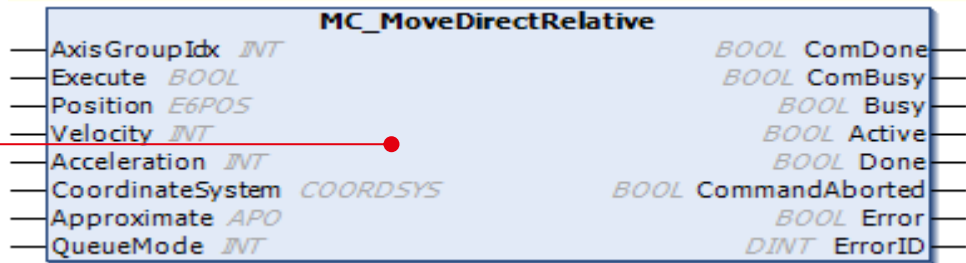
Start the communication



Simple structure
of coordinates



Move command
Open-PLC



Allgemeine Informationen



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Product KUKA.PLC mx-Automation 3.0

Order No. 00-279-817

Sales <https://www.kuka.com>

Content of download

- mxAutomation 3.0.2 Library für CoDeSys
- Sample project for communication via EtherCAT
- Sample project for communication via Profinet
- Sample project for communication via UDP

System requirements and restrictions

Programming system	CODESYS Development System V3.5.10.0
Runtime system	CODESYS Control V3.5.10.0
Supported platforms / devices	Robots Control type: KR C4 Simulation via "KR C4 OPS" possible
Additional requirements on the KUKA robot	System software: from KSS 8.5.0 Software option: mxAutomation V3.0.2 Configuration software: from WorkVisual V5.0.0
Restrictions	These examples demonstrate just the basic structure of an mxAutomation PLC program. KUKA does assume no liability for using these examples on our real robot.
Licensing	It is not necessary to license the PLC Library
Necessary accessories	Minimum requirement for the communication interface at your KUKA robot. <ul style="list-style-type: none">▪ For PROFINet -> KUKA.ProfiNet 4.1 (additional software)▪ For EtherNet/IP -> KR C4 EtherNet/IP 3.1 (additional software)▪ For EtherCAT -> EtherCAT Bridge FSoE M/M (additional software)▪ For UDP -> noting