MELSEC iQ-F and S7 1200 PLC controllers data exchange

1. Introduction

Control systems that have become an indispensable part of most industries are also present in the world of great physics experiments. The heart of control systems is most often PLC (Programmable logic controllers), designed with this application in mind. Currently, many companies, incl. Siemens, Mitsubishi Electric, Omron, ABB, Allen Bradley produce their own PLC. When developing an existing project, controllers from different manufacturers are often used within one control system. One of the challenges that must be overcome then is the integration of these devices. In this case, the topic will be focused on data exchange directly between two controllers from different companies. While the data exchange between the controllers of one manufacturer is often trivial, the communication of controllers from other suppliers requires familiarization with some communication protocols.

2. Description

During the implementation of the topic, students will learn about selected controllers from the SIMATIC S7 1200 and MELSEC iQ-F series and the TIA Portal and GX Works3 environment. The students' task will be to define the data exchange protocols that can be used in a given case. The next step will be to start up and configure the controllers. Then the students will implement data exchange in each of the controllers and prepare a simple network. The operation of the data exchange protocol will be tested using simple automation elements.

3. Prerequisites

- Basic electronics knowledge;
- Basics of computer networks knowledge.

4. Recommended number of participants

2 participants

5. Supervisors

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