Liquid cooling system data acquisition

1. Introduction

Since electronic devices generate large amounts of heat, it is necessary to use cooling systems in electronics cabinets. Using cooling systems ensures the environmental parameters required by manufacturers of electronic devices. In cooling systems, there are often cooling loops, between which a heat exchanger exchanges heat. Knowing the fluid parameters inside the loop, such as medium temperature, pressure, and flow, an appropriate control system can be prepared to meet the requirements of a specific application.

2. Description

During the implementation of the topic, the student will learn about the SIMATIC S7 1200 or S7 1500 PLC controllers and the TIA Portal environment and standard analog signals used in measurement systems. The student will also gain practical skills in using tools to prepare cables. The principles of operation of temperature, pressure, and volume flow transmitters will also be discussed. The student's task will be to read out the pressure, temperature, and volume flow from proper transducers using a PLC and visualize the results using the HMI panel. The task includes making the necessary electrical connections and learning the basics of data conversion.

3. Prerequisites

• Basic electronics knowledge.

4. Recommended number of participants

1 participant

5. Supervisors

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