Applied Principles of Smart Sensors

FESTO

This comprehensive course guides students through detailed project-oriented learning activities. Starting with the basics of each sensor, students perform practical exercises in a simplified work environment, allowing them to focus on smart sensors. Students can also connect these sensors to a PLC over PROFINET®, Ethernet/IP™ or Modbus®, just like in industry. Once the fundamentals are mastered, more complex I4.0 learning systems such as MPS, CP Lab, or CP Factory, offer further training opportunities: the wide variety of sensors integrated into these systems allows students to put their knowledge into practice and deepen their understanding of the role of sensors within a complete manufacturing system.

Industry Recognized Certification Topics

– Understanding the benefits of smart sensors in the context of Industry 4.0
– Selecting up, parameterizing, monitoring, and adjusting sensors
– Setting up IO-Link® communication
– Integrating sensors into different manufacturing communication layers
– Performing predictive maintenance
– Replacing sensors and uploading settings automatically
– Troubleshooting sensors

Core Competencies

– Gain an understand of what Industry 4.0 is, and how smart sensors are an important part of implementing Industry 4.0
– Be familiar with the main differences between smart sensors and regular sensors, and what advantages they offer over regular sensors
– Gain an understand of the principles of operation of the most common sensor types: inductive proximity sensors, photoelectric sensors, ultrasonic sensors, process sensors, RFID read/write devices, and barcode readers
– Be familiar with the communication protocols used to communicate with smart sensors, such as IO-Link and Profinet

Equipment

– Sensor workstation
– Smart Sensors
– Set of test objects
– PACTware
– Host computer (not included)

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