PROPOSED IN-HOUSE/ PUBLIC TRAINING PROGRAM

SENSOR & DAQ SYSTEM INTEGRATION

SAC
SHIPPING AND AVIATION COLLEGE

MINISTRY OF HUMAN RESOURCES

HRD CORP
HUMAN RESOURCE DEVELOPMENT CORPORATION

Certificate Id
ae072f50-c797-11ed-b951-4ffdd6fe72de
Trainer Id
1636
Verify Authenticity

ACCREDITED HRD CORP TRAINER

Contact:

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ABOUT US

We offer training solutions to various organizations, matching their requirement in technical segments since 1994. We always strive to guarantee overall customer satisfaction and place utmost importance to customer feed back. Over the years we have trained more than 500 organizations and over two thousand participants in all our training modules. We have also expanded our services to cover technical training institutions and institutions of higher learning providing extensive knowledge sharing for all levels and fields of expertise in the workplace.

INTRODUCTION

Sensor is a device used to collect information where it measures a physical quantity and converts it into a signal which can be read by an instrument. Sensors are used in everyday objects such as cars, machines, aerospace, medicine, manufacturing, robotics and others.

This training will cover various types of sensors & DAQ system integration such as, Inductive & Capacitive proximity sensors, photo-electric sensors covering thru-beam, retro-reflective and proximity sensing technologies.

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COURSE OBJECTIVES

By the end of this course, participants will be able to :

- Describe advantages, limitations of various types of sensors
- Describe the design and operating principles of the different types of sensors
- Identify different categories of each type of sensor
- Describe the effect of dielectric constant in capacitive proximity sensors
- Describe the differences between “Light” and “Dark” operated mode of a photo-electric sensor
- Describe the use of fiber optics and laser technology in photo-electric sensors
- Select different sensor types used for a particular application based on material, sensing distance, environment and output load requirement
- Understand the importance of signal conditioning & Communication Interface
- Understand what is Data Acquisition System

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COURSE CONTENT

Module 1 : Sensor Technology & Application

i. Introduction to Sensors
ii. Physical Principles of sensing

Module 2 : Types of industrial sensors

i. Digital and Analog sensors
ii. 2-wire and 3-wire sensors
iii. DC & AC operated
iv. Short range and Long range sensing

Module 3 : Front End - Sensing Technology

i. Capacitive
ii. Inductive
iii. Optical
iv. Laser

Module 4 : Back End – Electrical Interface

i. 2-wire or 3-wire
ii. DC 24V or AC 220V supply
iii. N.O. or N.C.
iv. NPN or PNP

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COURSE CONTENT

Module 5 : Housing – Environmental Protection

Module 6 : Signal conditioning

i. Why signal conditioning
ii. Sources of errors
iii. Ways to preserve signal integrity
iv. Types of signal conditioning

Module 7 : Communication Standard

i. Data Transmission
ii. RS 232 (standard) and RS 485

Module 8 : Data Acquisition System

i. Introduction & Overview of DAQ
ii. Data acquisition hardware
iii. Data acquisition software

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WHO SHOULD ATTEND

- All staff involving the maintenance of electrical and electronic of machine control systems
- Executives
- Managers
- Support employees

METHODOLOGY

The workshop is interactive & participative with a mixture of:

- Self assessment
- Videos and activities
- Circuit simulations
- Group discussions & case studies
- Interactive lectures

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TRAINER'S PROFILE

Mr. Henry Choong has more than 30 years of solid experience in the field of industrial automation (PLC, Pneumatics, Hydraulics, Electrical, Vacuum, Sensors & DAQ etc). He is a certified trainer by Pembangunan Sumber Manusia Berhad (PSMB), and also by AB Mecman, Stockholm, Sweden.

During his employment with Jebsen & Jessen (M) Sdn Bhd and Allen Automation & Pneumatics Sdn Bhd, he had numerous project experiences in the automation industries in handling PLCs, pneumatics, hydraulics systems as well as sensor technology, both hardware and software for system integration.

Beside his practical engineering experiences, he is also actively involved in training and consultancy. Some of the organizations and institutions which he had trained and collaborated, includes SKF Bearings Industries (M) Sdn Bhd, Petronas Refinery, Malacca Industrial Skills Development Centre (MISDEC), Selangor Human Resource Development Centre (SHRDC) etc.

In addition, he constantly presents seminars updating the latest industrial technologies to institutions of higher learning. He was also in the panel for the development of NOSS in Robotic Technology, Sijil Kemahiran Malaysia (SKM) Level 4 & Level 5

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