IDX

Industrial Data Xchange
Competence Centre

PROFI BUS® PROFI NET®

THE IDX ACADEMY

CORPORATE TRAINING

Operational excellence
unlocked at every level

2025

Industrial Communications Training Brochure

Contents

We can organise customised training sessions for our products or conduct training at your site. Please reach out to us via email at academy@idx.co.za to discuss your requirements.

Industrial Data Xchange
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![Industrial Data Xchange — Competence Centre logo. PROFIBUS PROFINET]

Developing your skills one step at a time

About The IDX Academy

Established in 2001, the IDX Academy offers industrial Information and Communications Technology (ICT) training.

The IDX Academy develops and teaches accredited courses, which combine both the theoretical and practical skills required, to efficiently manage any industrial network.

In 2004, the Academy received its certification from PROFIBUS International (PI) becoming the first and only Certified PROFIBUS International Competence Centre (PICC) in Africa.

With the emergence of PROFINET, the IDX Academy extended its portfolio and became a Certified PROFINET International Competence Centre (PICC) in 2011.

The IDX Academy is Africas's first, and still the only, PICC with the scale and portfolio to deliver comprehensive, integrated, and industry-leading industrial training solutions.

Excellence since 2001

We have gained valuable experience over the last two decades and we are excited to share our knowledge with your team.

Certification

Receive an internationally accredited certificate upon the successful completion of our theoretical and practical examinations.

CPD Points

Earn CPD points on selected Fieldbus Courses to develop your ICT skills, knowledge and enhance your experience.
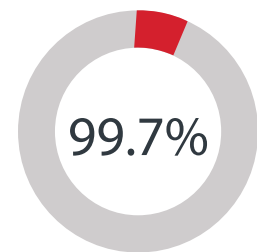
Take control of your infrastructure

Why train your employees?

Training is essential for maintaining critical infrastructure to ensure that equipment operates at peak performance, and within a safe environment.

Limited budgets, time constraints and a changing workforce can make it challenging to effectively deploy training programmes across multiple sites.

IDX's technical training solutions can help simplify the process so that you cost-effectively achieve operational excellence.

99.7%

Success Rate

99.7% of our students conveyed that the content consumed during our training is relevant to their average daily job tasks.

Minimise downtime and improve business connectivity

☑ Increase efficiencies in processes

☑ Reduce wastage

☑ Adopt new technologies

☑ Empower employees

☑ Improve cost of ownership

☑ Uniformity of work processes

☑ Boost productivity

☑ Expand job satisfaction levels

" *"Very organised and the training material is excellent. I enjoyed this course."*

" *"Well organised and the material was insightful for both the practical and theory test."*

" *"Very informative and enlightening based on the plant experience that I have."*

Leverage training and technology

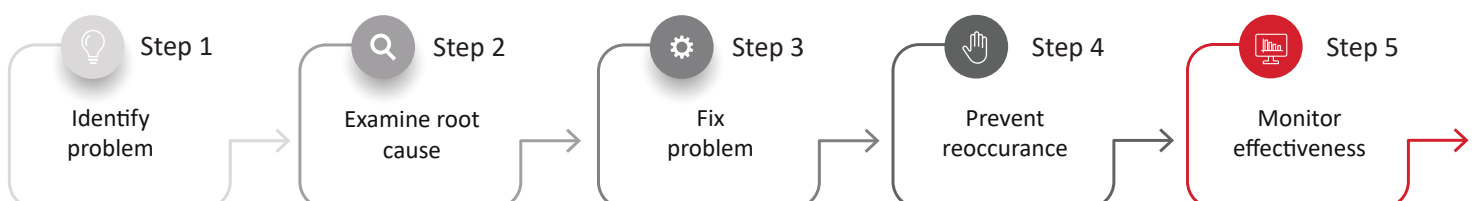## Convince your employer to pay for your training

Do you feel the need to adapt to new developments in your field? Do you need to boost your skills and increase your technical knowledge but do not know how to ask your employer to pay for your training? You may be surprised to discover that your employer is more inclined to support your training than you are expecting.

Here are some motivation points that you may use to convince your employer to pay for your technical training:

- ☑ Identify and troubleshoot problems faster
- ☑ Accept more responsibility
- ☑ Build leadership ability
- ☑ Better company image

- ☑ More efficient at handling tasks
- ☑ Pass on new skills to the team
- ☑ Increase job satisfaction
- ☑ Tax-deductible

Enabling productivity through active learning

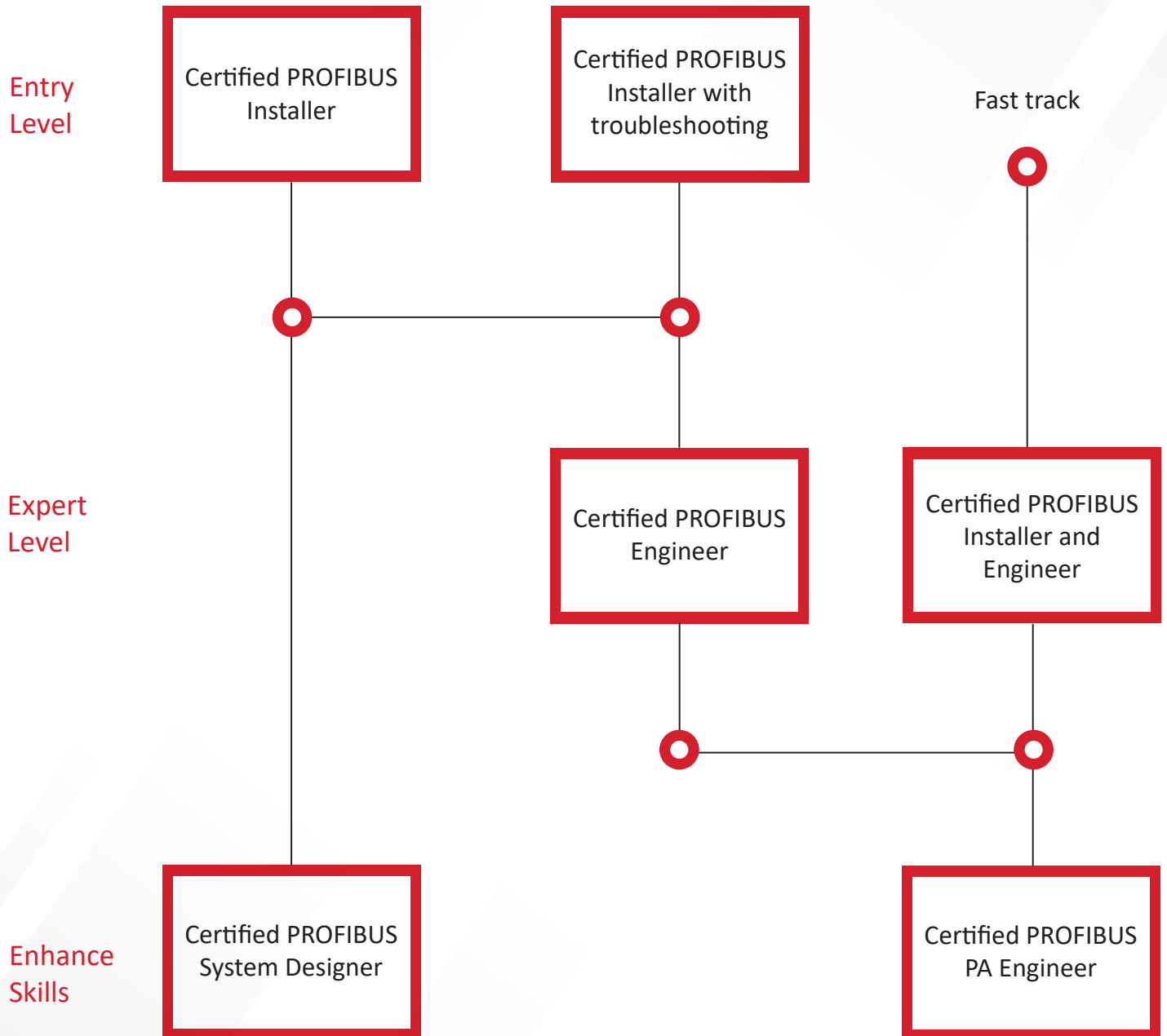After your training is complete, we want you to leave with a better understanding of the topic in which you aim to progress in. You will be better equipped to articulate new strategies and make better decisions in your workplace.

Step 1	Step 2	Step 3	Step 4	Step 5
Identify problem	Examine root cause	Fix problem	Prevent reoccurance	Monitor effectiveness

Become a PROFIBUS expert

PROFIBUS plays an essential role in industrial automation. In most cases, certified employees and contractors should be the only ones who are truly equipped to carry out PROFIBUS network installations, maintenance and troubleshooting.

Through the valuable Certified PROFIBUS status, companies and their employees can distinguish themselves from competitors who also make use of this technology.

Entry Level

- Certified PROFIBUS Installer
- Certified PROFIBUS Installer with troubleshooting
- Fast track

Expert Level

- Certified PROFIBUS Engineer
- Certified PROFIBUS Installer and Engineer

Enhance Skills

- Certified PROFIBUS System Designer
- Certified PROFIBUS PA Engineer

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Certified PROFIBUS Installer with Troubleshooting

Process Field Bus (PROFIBUS) is the world's leading fieldbus technology, developed by industry experts to connect and control devices within industrial environments. It enables communication between field devices such as sensors, actuators, and controllers, ensuring efficient data exchange across systems.

The Certified PROFIBUS Installer with Troubleshooting Course is a comprehensive two-day, hands-on training program designed for individuals with little to no experience with PROFIBUS.

Course Information

This course provides a detailed overview of PROFIBUS network operation and characteristics, covering the theoretical, practical, and troubleshooting elements of PROFIBUS DP and PA installations. Participants gain practical experience using demonstration boards that simulate real-world industrial environments, helping them understand network topology, wiring, and fault detection.

In addition to network fundamentals, the course delves into digital systems, covering their operating principles, and application within PROFIBUS networks. Participants develop an understanding of PROFIBUS properties, transmission technology, and cabling installation, with a focus on both DP (RS-485) and PA implementations.

Building on this foundation, the course explores common PROFIBUS faults, troubleshooting strategies, and problem analysis techniques. Participants learn to identify and resolve issues using testing and diagnostic tools. The course concludes with practical and theoretical examinations, ensuring attendees can effectively maintain and troubleshoot PROFIBUS networks.

Who Should Attend This Course

Any individual that installs or provides technical support to PROFIBUS networks.

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Duration

This course is completed within two days.

CPD Points

Students can earn one ECSA-accredited CPD point for this course.

Certification

Receive an internationally recognised certificate after passing the theoretical and practical examinations.

Certified PROFIBUS Engineer

Process Field Bus (PROFIBUS) is the world's leading fieldbus technology, developed by industry experts to connect and control devices within industrial environments. It enables communication between field devices such as sensors, actuators, and controllers, ensuring efficient data exchange across systems.

The Certified PROFIBUS Engineer Course is a comprehensive four-day, hands-on training program designed to equip individuals with the skills to troubleshoot technical difficulties that may accompany a PROFIBUS installation.

Course Information

This course provides a comprehensive understanding of PROFIBUS technology, covering its history, protocol positioning, and physical layers. Participants engage in practical exercises to reinforce their knowledge, including site audit checklists and hands-on experience with DPV0 interactions and extensions such as DPv1.

Key topics include system debugging, network components, and functional earthing and bonding, ensuring a thorough grasp of PROFIBUS DP and PA functionalities.

As the course progresses, participants focus on system timing, troubleshooting techniques, and advanced DP network components. The course concludes with a revision session and trial examination, followed by an internationally recognised certification exam, equipping participants with the skills to implement and maintain reliable PROFIBUS networks.

Who Should Attend This Course

Application engineers, system integrators, technical support/maintenance staff, project leaders, installers, suppliers.

Prerequisites

All students of the Certified PROFIBUS Engineer Course must first complete the Certified PROFIBUS Installer Course.

For those who have not, the Certified PROFIBUS Installer Course is scheduled for the same week.

Duration

This course is completed within four days and the combined course runs for five days.

CPD Points

Students can earn four ECSA-accredited CPD points for this course.
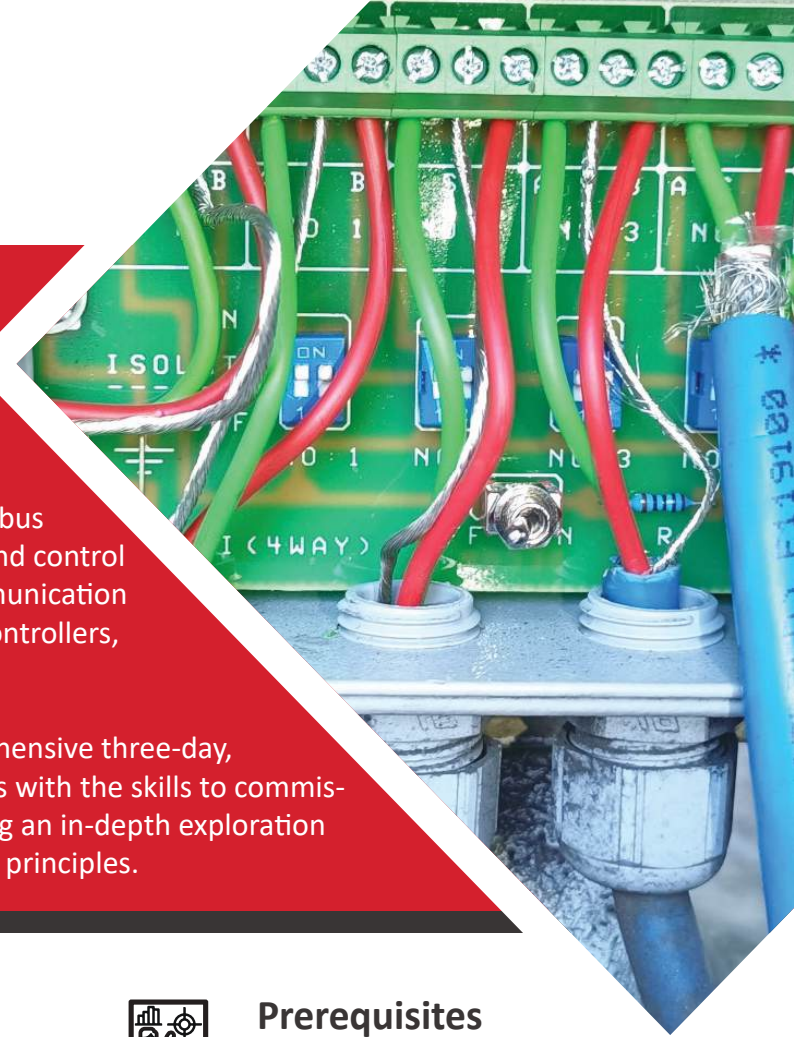
Certification

Receive an internationally recognised certificate after passing the theoretical and practical examinations.

Certified PROFIBUS PA Engineer

Process Field Bus (PROFIBUS) is the world's leading fieldbus technology, developed by industry experts to connect and control devices within industrial environments. It enables communication between field devices such as sensors, actuators, and controllers, ensuring efficient data exchange across systems.

The Certified PROFIBUS PA Engineer Course is a comprehensive three-day, hands-on training program designed to equip individuals with the skills to commission and troubleshoot a PROFIBUS PA network, providing an in-depth exploration of its fundamentals, characteristics, and network design principles.

Course Information

This course provides a comprehensive understanding of PROFIBUS PA, covering basic principles and how to integrate PA into control systems. Participants learn about DP/PA and PN/PA couplers, including links and the migration from PA to Ethernet APL.

The course also covers cabling rules, installation practices, and the importance of grounding and shielding in PROFIBUS PA installations, ensuring reliable and safe network setups. Practical exercises provide hands-on experience to reinforce these concepts.

In addition, the course delves into more advanced topics like PROFIBUS DP-V1, bus analysis, and PA profiles, enabling participants to analyse and optimise network performance.

The course concludes with practical and theoretical examinations, ensuring attendees can effectively implement and maintain PROFIBUS PA networks.

Who Should Attend This Course

System programmers, control and instrumentation engineers, design and planning engineers, service and maintenance staff, installers, project managers.

Prerequisites

All students of the Certified PROFIBUS PA Engineer Course must first complete the Certified PROFIBUS Engineer Course.

Duration

This course is completed within three days.

CPD Points

Attendees can earn three ECSA-accredited CPD point for this course.

Certification

Receive an internationally recognised certificate after passing the exams.

Certified PROFIBUS System Designer

Process Field Bus (PROFIBUS) is the world's leading fieldbus technology, developed by industry experts to connect and control devices within industrial environments. It enables communication between field devices such as sensors, actuators, and controllers, ensuring efficient data exchange across systems.

The Certified PROFIBUS System Designer Course is a three-day, hands-on training program designed for those looking to design modern PROFIBUS control systems, focusing on minimising the impact of the inevitable control system and network failures throughout a plant's lifecycle.

Course Information

This course provides a comprehensive understanding of PROFIBUS system architecture, focusing on planning, layout, and environmental considerations for optimal network performance.

Participants learn high-level communication methods, including fibre optic and wireless technologies, while exploring PROFIBUS PA integration to design efficient and reliable industrial networks.

Advanced topics include hazardous environment requirements, ProfiDrive profiles, diagnostics, and network monitoring, along with fail-safe design, safety, availability, and timing considerations.

The course ends with an internationally recognised certification examination that includes both practical and theoretical components.

Who Should Attend This Course

Application engineers, system integrators, technical support/maintenance staff, project leaders, installers, suppliers, automation and control systems staff.

Prerequisites

All students of the Certified PROFIBUS System Designer Course must first complete the Certified PROFIBUS Installer Course.

Duration

This course is completed within three days.

CPD Points

Students can earn three ECSA-accredited CPD point for this course.

Certification

Receive an internationally recognised certificate after passing the theoretical and practical examinations.

Certified PROFINET Engineer

Process Field Network (PROFINET) is a leading industrial Ethernet technology that enables high-speed, real-time communication and seamless integration between devices in automation systems.

The Certified PROFINET Engineer Course is a comprehensive three-day, hands-on training program designed to equip individuals with the skills to design, install, commission, and troubleshoot a PROFINET network.

Course Information

This course provides an in-depth view of the PROFINET network, focusing on installation guidelines, Ethernet basics, and the infrastructure required for a successful network setup. Participants gain practical experience using demonstration boards that simulate real-world industrial environments, helping them understand Ethernet basics, network components, time scheduling and sequences. Students also learn to work with key technologies like IWLAN, SNMP, and LLDP, while gaining a solid understanding of the PROFINET protocol, message structure, and network components.

In addition, the course covers troubleshooting techniques, network failure identification, and the use of diagnostic tools and remote monitoring solutions. Advanced sessions on PROFINET isochronous real-time systems and GSD files equip attendees with the knowledge to optimise network performance. The course concludes with practical and theoretical examinations, ensuring attendees can effectively maintain and troubleshoot PROFINET networks.

Who Should Attend This Course

Any individual who installs or provides technical support to PROFINET networks.

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Duration

This course is completed within three days.

CPD Points

Students can earn three ECSA-accredited CPD points for this course.

Certification

Receive an internationally recognised certificate after passing the theoretical and practical examinations.

INDUSTRIAL ETHERNET

Introduction to Industrial Ethernet

Industrial Ethernet is the backbone of modern industrial communication, providing a high-speed, reliable network for devices and systems to exchange data in real time.

The Introduction to Industrial Ethernet Course is a one-day, hands-on training program designed to equip individuals with the knowledge to work confidently with industrial Ethernet systems.

Course Information

The Introduction to Industrial Ethernet Course is a one-day, hands-on training program designed to equip individuals with the knowledge to work confidently with industrial Ethernet systems, making them well-equipped to handle the demands of modern industrial networking.

This course provides a comprehensive introduction to Industrial Ethernet, which is crucial for establishing reliable communication in industrial environments. Participants will gain an understanding of the basics of Ethernet, including how it functions and the key differences between standard and industrial networks. The course covers installation considerations, including physical setup, cabling require-ments, and network topology to ensure optimal perfor-mance and reliability. Security considerations will also be explored to address the increasing risks of cyber threats in industrial networks, equipping attendees with the knowl-edge to safeguard critical systems.

Throughout the training, common faults and diagnostic mechanisms will be highlighted, providing learners with the skills to identify and troubleshoot issues that may arise in an industrial Ethernet network. Practical exercises will be incorporated to reinforce the theoretical aspects of the course, ensuring participants gain hands-on experience with real-world scenarios. The course concludes with prac-tical exercises, ensuring attendees will have a strong grasp of Ethernet communication.

Who should attend

Installers, network engineers, project planners, industri-al engineers, maintenance workers, plant employees.

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Duration

This course is completed within one day.

CPD Points

Attendees can earn one ECSA-ac-credited CPD point for this course.

Certification

Upon completion of the course, attendees will be awarded a certifi-cate of attendance

Fundamentals of Modbus

Modbus is a widely used communication protocol in industrial automation that enables data exchange between electronic devices. The protocol supports reading and writing data such as sensor measurements, actuator commands, and system statuses.

The Fundamentals of Modbus Course is a one-day, hands-on training program designed to equip individuals with the knowledge and tools necessary to implement and maintain Modbus-based systems effectively.

Course Information

This course provides an introduction to Modbus, a widely used industrial communication protocol. Participants will explore the fundamentals of digital systems, including their operating principles and underlying physics.

The course covers physical transmission media, explaining how data is transmitted across different network types. Attendees will also learn about various Modbus protocol versions and how they facilitate seamless communication between devices in automation environments.

A key focus of the training is understanding the Modbus protocol, including its structure, functions, and practical applications. Participants will engage in hands-on exercises to apply their knowledge, gaining experience in setting up and troubleshooting Modbus networks.

The course concludes with practical exercises, ensuring attendees will have a strong grasp of Modbus communication.

Who Should Attend This Course

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Duration

This course is completed within one day.

CPD Points

Students can earn one ECSA-accredited CPD point for this course.

Certification

Upon completion of the course, attendees will be awarded a certificate of attendance.

Actuator Sensor-Interface

Fundamentals of Actuator Sensor-Interface (AS-i)

Actuator Sensor-Interface (AS-i) is a globally recognised industrial networking solution designed for simple, cost-effective communication between sensors, actuators, and controllers

The Fundamentals of Actuator Sensor-Interface (AS-i) Course is a one-day, hands-on training program designed to equip individuals with the knowledge and tools necessary to maintain and optimise AS-i networks in industrial environments.

Course Information

This course provides an introduction to digital communication systems, focusing on AS-i. Participants will gain a solid understanding of AS-i technology, its architecture, and how it facilitates seamless communication between sensors, actuators, and controllers in industrial automation. The training covers key concepts, including data transmission principles, topology options, network structures, and integration with other industrial communication protocols.

A major component of the course is fault finding in AS-i systems. Attendees will learn how to diagnose and troubleshoot common issues using structured fault-finding techniques and an AS-i checklist. Practical exercises will help reinforce problem-solving skills, ensuring that participants can efficiently identify and resolve communication failures. The course concludes with a tutorial, ensuring attendees can effectively build and troubleshoot AS-i networks.

Who Should Attend This Course

Installers, network engineers, project planners, industrial engineers, maintenance workers, plant employees.

Prerequisites

This course covers advanced content. Participants should have a technical qualification, experience working with digital communication systems, and strong proficiency in English.

Duration

This course is completed within one day.

CPD Points

Students can earn one ECSA-accredited CPD point for this course.

Certification

Upon completion of the course, attendees will be awarded a certificate of attendance.

Training Schedule for 2025

Course	Date	Duration
Certified PROFIBUS Installer with troubleshooting	12 Mar 2025	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	24 Mar 2025	5 days
Certified PROFINET Engineer	08 Apr 2025	3 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	19 May 2025	5 days
Certified PROFIBUS System Designer	27 May 2025	3 days
Certified PROFIBUS Installer with troubleshooting	11 Jun 2025	2 days
Certified PROFINET Engineer	24 Jun 2025	3 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	14 Jul 2025	5 days
Certified PROFIBUS PA Engineer	22 Jul 2025	3 days
Certified PROFIBUS Installer with troubleshooting	06 Aug 2025	2 days
Certified PROFINET Engineer	19 Aug 2025	3 days
Certified PROFIBUS Installer with troubleshooting	03 Sep 2025	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	15 Sep 2025	5 days
Certified PROFIBUS System Designer	30 Sep 2025	3 days
Certified PROFIBUS Installer with troubleshooting	08 Oct 2025	2 days
Certified PROFINET Engineer	21 Oct 2025	3 days
Certified PROFIBUS Installer with troubleshooting	12 Nov 2025	2 days
Certified PROFIBUS Engineer (incl. Certified PROFIBUS Installer)	17 Nov 2025	5 days
Certified PROFINET Engineer	02 Dec 2025	3 days

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Operational Excellence Unlocked at Every Level

Get in touch with us

At IDX, we strive to contribute to the growth and profitability of your business by providing the appropriate tools and training necessary for job excellence and career advancement.

We have been working with businesses like yours since 2001, and draw upon our vast experience spanning across industries, business functions, and culture to deliver a value-adding experience for your most valuable assets - your people.

Sweat your assets by empowering your people!

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