fischertechnik

Higher Education & Industry

Unlocking the future of production.

fischertechnik simulation models

Industry continuum

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Agile Production Simulation
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Agile production					■
AI for quality control			■		■
Fluid logistics					■
Automated guided vehicle systems (AGVs) (VDA5050)					■
Digital Twin		■			■
Factory simulation	■	■		■	■
Digital production environment				■	■
Industry 4.0				■	■
IoT				■	■
OPC UA				* only for 24V	■
Networking, MQTT				■	■
Automation		■		■	■
PLC programming		■		* only for 24V	■
Virtual Commissioning		■			

Symbols

Listed components included

Included software / control unit

Pedagogical material / support

Ideal supplement

Additional information on the product

Unlocking the future of production.

Fit for the future with fischertechnik!

The production of tomorrow is the subject of research, industry and higher education. It describes the transformation towards agility, customer-orientation, artificial intelligence and Industry 4.0. This creates a multitude of challenges that are influenced by technological developments, social changes and global trends. Overcoming these challenges requires a holistic and proactive approach from companies that invest in innovation and employee training in order to successfully shape the production of tomorrow and remain globally competitive.

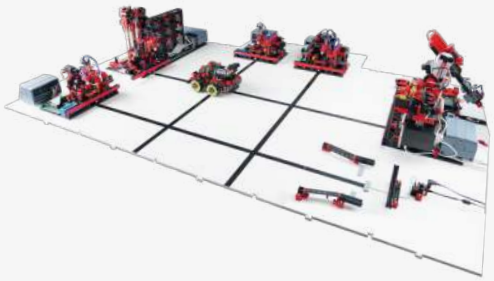
Our approach is therefore...

...understand on a small scale before implementing on a large scale. With fischertechnik simulation models, you can prepare yourself for the future, create sustainable learning experiences in vocational training and studies, overcome the hurdles of apparently complex transformations and conduct research into future topics.

"The effective teaching of principles and methods for the automatic control of industrial machines and processes demands a platform that allows students to experience how these systems work and are controlled to perform typical manufacturing tasks. The problem is that real-world industrial systems are large, expensive, and potentially dangerous to operate. Therefore, installing such systems and exposing them to students is challenging as it involves substantial investment, extensive laboratory facilities, and management of Occupational Health and Safety (OHS) implications. fischertechnik systems are compact, affordable, and offer embedded compressed air capability, making them an attractive solution to our university needs. The fischertechnik didactic manufacturing units were first trialled in 2019. The student feedback was highly positive. Exposure to small-scale representative manufacturing systems controlled by state-of-the-art industrial PLCs provided the students with the ability to apply advanced theoretical knowledge to solve complex real-world problems. I highly recommend the use of fischertechnik didactic systems for teaching industrial automation concepts to undergraduate and postgraduate engineering students.

Dr. Carlos Teixeira
Lecturer, RMIT University in Melbourne (Australia)

Agile Production Simulation



Agile manufacturing.

Modularity: Individual process modules can be combined as required.

Quality assurance with AI.

Fluid logistics with an AGV for transporting goods.

Included: Digital Learning Platform with Digital Twin.

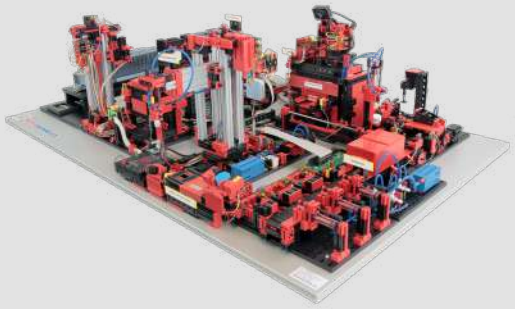
Prospectively expandable with additional Annealing Furnace and Automated Guided Vehicle.

6-axis robot for operating the storage and retrieval station.

24V Power supply.

VS

Training Factory



Assembly line production.

Permanently linked process modules defined in a fixed sequence.

Quality assurance with colour recognition.

Permanently interlinked logistics with a 3-Axis Robot for transporting goods.

Included: CAD data for creation a Digital Twin.

Training Factories are not prepared for the addition of further process modules.

Power supply optionally 24V or 9V.

The „production of tomorrow“ requires more flexibility and versatility in order to meet the constantly changing demands of the market. Driverless transport vehicles play a central role in this. For example, fischertechnik vehicles with different chassis are used at our institute to test new control and regulation algorithms. New approaches can thus be tested with fischertechnik in model format and the theory can be demonstrated in university teaching on a practical model. This is a real added value in the education of our students, which is also a lot of fun and creates enthusiasm for technology.

Univ.-Prof. Dr.-Ing. Robert Schulz
Head of Institute / University in Stuttgart (Germany)
Institute of Materials Handling and Logistics

Agile Production Simulation

Agile Production

The Agile Production Simulation is a miniature factory facility that depicts the factory of tomorrow on a small scale. Several process modules work together in an agile production environment. The Agile Production Simulation is the perfect training and simulation tool for in-company and inter-company training and further education.

Agile production processes combine the freedom of workshop production with the efficiency of assembly line production. Flexibility and adaptability are key benefits of agile production, which are perfectly suited to the challenges of tomorrow's production. The economic handling of decreasing batch sizes and increasingly complex processes in production and logistics is possible thanks to flexible process modules.

The compact simulation model Agile Production Simulation offers a unique opportunity to make hands-on future technologies tangible.

KEY AREAS

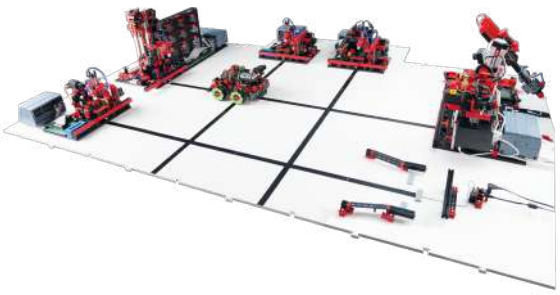
- Agile production
- Digital production environment
- Quality control with artificial intelligence
- Automated guided vehicle systems (AGVs)
- Digital Twin
- Automation and PLC programming

PLC programming

product page

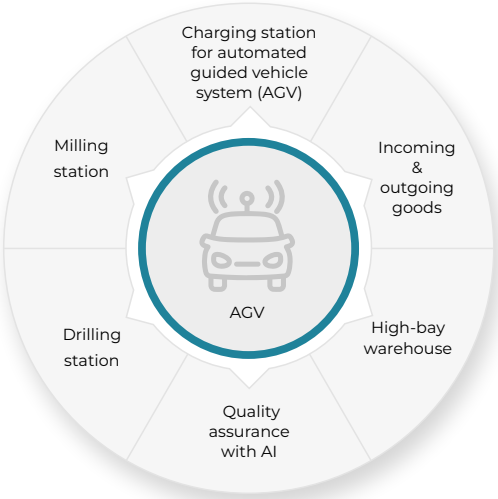
Agile Production Simulation 24V

Agile, modular and networked - the factory of the future.



- Power supply 24V power supply unit 11A
- 1x Raspberry Pi 4B central controller
- Single module control 5x PLC Siemens S7-1200
- 4x TXT 4.0 Controllers: 1x for cloud access, 1x for sensors and camera, as well as 6-Axis Robots, 1x for Quality assurance with AI and 1x for AGVs
- 1x WLAN router

- **All codes and protocols are available open source on GitHub**
- PLC basic programme (structured text)
- TypeScript for centralised control on the Raspberry Pi
- Node-RED for communication between PLC and TXT 4.0 Controller
- Python for programmes on TXT 4.0 Controller
- Tensorflow for supervised learning in Quality assurance with AI
- fischertechnik-cloud connection
- MQTT interface and OPC UA translation
- Dashboards available for order control and visualisation of the factory status as well as for determining key figures



Digital Learning Platform (DLP) - Digital Twin

Possible extensions:
Additional AGV & Annealing Furnace

Item no.	569289
EAN	4048962494792
Dim., assembled (mm)	1.290 x 1.840
Weight (g)	52.500

Storage Case, 2-pieces

Safe storage and transportation of the APS.

Two aluminium cases with foam inlay

Item no.	572862
EAN	4048962523553
Dim. (LxWxH) (mm)	1.200 x 800 x 725
Weight (g)	33.600

APS Add On: Automated Guided Vehicle (AGV)

Simulate parallelization and prioritization of production workflows.

- 1x TXT 4.0 Controller
- 1x Charging electronics
- 4x Encoder motor
- 4x Mecanum Omniwheels
- 1x USB-Camera
- 2x Push button
- 2x Ultrasonic sensor
- 1x Infrared track sensor
- 1x Phototransistor
- Power supply 9V

- The programmes in Python are already loaded onto the controller of the AGV. The MQTT protocol is also used for communication.
- All source codes are also freely available on GitHub.

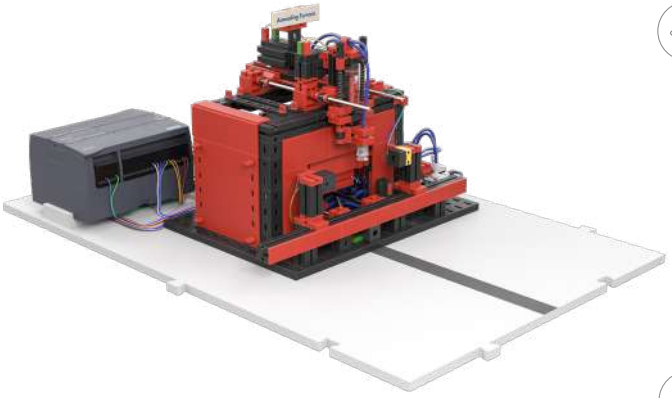
Item no.	571908
EAN	4048962516692
Dim. (LxWxH) (mm)	245x175x135
Weight (g)	1.430

ATTENTION: Can only be used in combination with the Agile Production Simulation.

Communication Standard VDA 5050

APS Add On: Annealing Furnace

Simulate the introduction of additional production derivatives.



- 1x SIEMENS S7-1200 control unit
- 4x push buttons
- 1x phototransistor
- 1x compressor 24V
- 5x 3/2-way solenoid valve 24V
- 1x vacuum suction cup
- 7x pneumatic cylinder
- 3x light barriers LED 24V
- 1x motor 24V

- 24V model controlled with SIEMENS S7-1200
- Program in structured text already played on controller.

Item no.	571909
EAN	4048962516708
Dim. (LxWxH) (mm)	570x380x223
Weight (g)	4.460

ATTENTION: Can only be used in combination with the Agile Production Simulation.

PLC programming

DIGITAL LEARNING PLATFORM

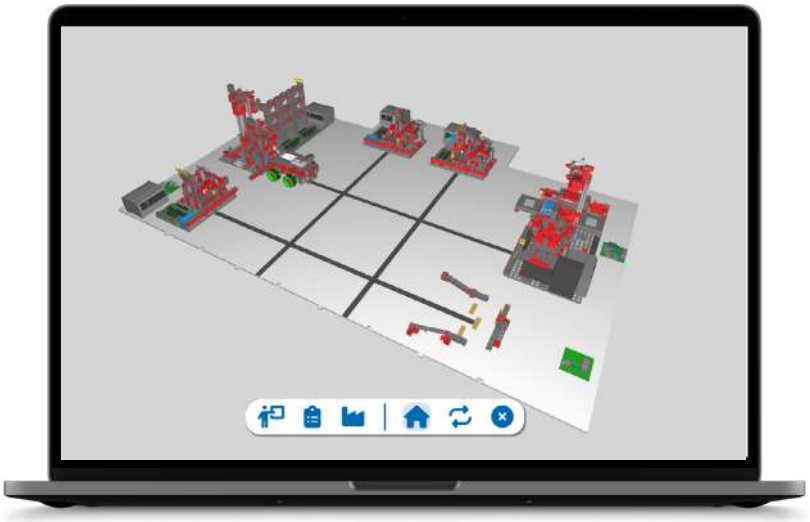
Digital Learning Platform „Digital Twin“

Ready for the learning of the future?

- Agile Production Simulation and Digital Twin: valuable for education and training in digitalization.
- Learners get to grips with complex Industry 4.0 topics and put them into practice.
- Acquire essential future skills in a safe, interactive environment.
- Simulation enables innovative production processes to be experienced before implementation in the real factory.
- Suitable for schools and companies: Hands-on experience in Industry 4.0, automation, networked production and more.
- Available in German, English and Spanish.
- Compatible with Windows, Mac OSX, Linux.

- Graphics card: NVIDIA GeForce GTX1070/ Quadro P500 (or better), AMD Radeon Vega 56/ Pro WX7/ Fire Pro W9100 (or better)
- CPU: Intel Core i5-4590/ AMD FX 8350 (or better)
- Memory: min. 4 GB RAM
- File size: ~300 MB
- Current version: 2024.01.A

Didactic accompanying material incl. learning success control



The Digital Learning Platform (DLP) is an essential tool for academic support in the context of Industry 4.0, AI, VR and production optimisation. Through the practical integration of the fischertechnik Agile Production Simulation, it not only conveys abstract concepts, but also enables an interactive, experience-orientated understanding. This immersive learning environment is based on targeted didactics that meet the highest standards and ensure a structured transfer of knowledge.

The DLP is characterised by its focus on practical applications, which promotes a seamless link between theory and practice. As an integral part of training programmes, it not only stands out through the transfer of theoretical knowledge, but also strengthens key specialist skills in the field of industry 4.0. Their flexibility allows customised adaptation to individual learning needs, while their scalability and seamless integration into existing education systems ensure sustainable implementation.

further
information

Development of the Digital Learning Platform

Introduction to Agile Production Simulation
- Interactive explanation of all process modules
- Interactive explanation of the controls, actuators and sensors

DLP
DIGITAL LEARNING PLATFORM

1	2	3	4
Learning module	Learning module	Learning module	Learning module
Agile Production	**Internet of Things (IoT)**	**Artificial Intelligence**	**Automation**

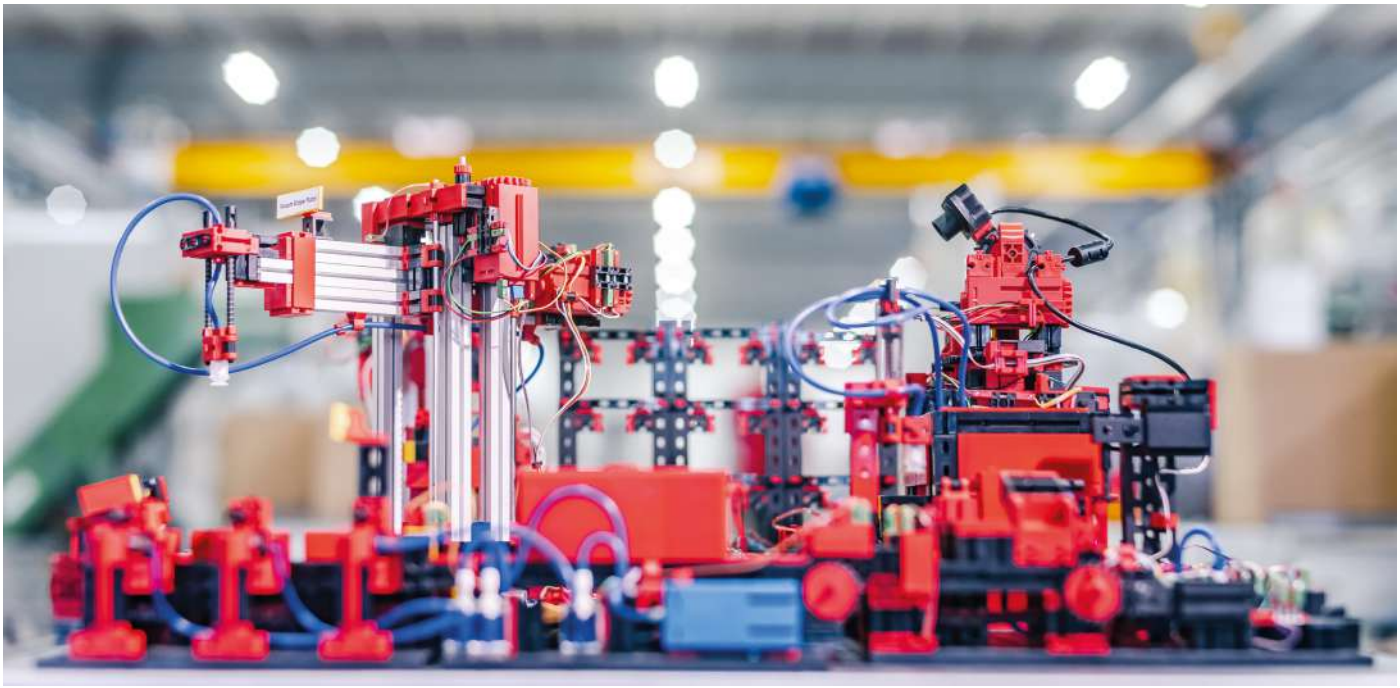
Each learning module includes:
- **Theory section:** Create a basic understanding
- **Practical section:** Simulate and understand with haptic system and/or Digital Twin
- **Transfer performance:** What benefits does the learning offer in the real world?

> Overall, the DLP functions as an indispensable resource that fulfils the current requirements of training at the intersection of modern technologies. It's contribution to the promotion of education and qualification is not only significant, but indispensable for the formative shaping of future industrial and knowledge landscapes.

Dr.-Ing. Dipl. Kfm. Michael W. Grethler
Head of Unit Digital Twin / Head of Industry 4.0 Collaboration LAB on Institute for Information Management in Engineering (IMI) / Karlsruhe Institute of Technology (KIT) in Karlsruhe (Germany)

Training Factories

Industry 4.0



The fischertechnik Training Factories make Industry 4.0 tangible. The complex buzzword loses its hurdle and is transformed into usable expertise. From digital traceability and cloud-based real-time monitoring to automation and networking, key content relating to the digitalisation of the production environment is understood in a sustainable way. This enables them to be implemented in industry, research and education.

Industry 4.0 describes the progressive integration of digital technology into industrial production. It is a paradigm shift in the way products are manufactured and business processes are organised. Industry 4.0 encompasses a range of technologies and concepts such as the Internet of Things (IoT), big data and data analysis or cloud computing. The goals of Industry 4.0 are increased efficiency and productivity in industrial production. By integrating these technologies, companies can optimise their processes, reduce production costs and improve quality.

KEY AREAS

- IOT
- Automatisation
- Increased efficiency
- Cost reduction
- Quality improvement
- Process optimisation
- Innovation promotion
- Human-machine collaboration
- Sustainability
- Competitiveness

PLC programming

Product pages
incl. videos

Available in **4 control unit versions:**
- **SPS S7-1500 24V**
- **PLC connection board 24V**
- **Without PLC control 24V**
- **Control via TXT 4.0 Controller 9V**

- Environmental sensor
- USB camera
- 1 x WLAN router

- **All programs and codes are available open source on GitHub**
- PLC basic programme (structured text)
- TypeScript for centralised control on the Raspberry Pi
- Node-RED for communication between PLC and TXT 4.0 Controller
- Python programmes on TXT 4.0 Controller
- fischertechnik-cloud connection
- Connection to your own cloud
- Dashboards to visualise processes from the customer, supplier and production perspective

Technical documentation on the fischertechnik website

Storage Case

Safe storage and transportation of the Training Factories.

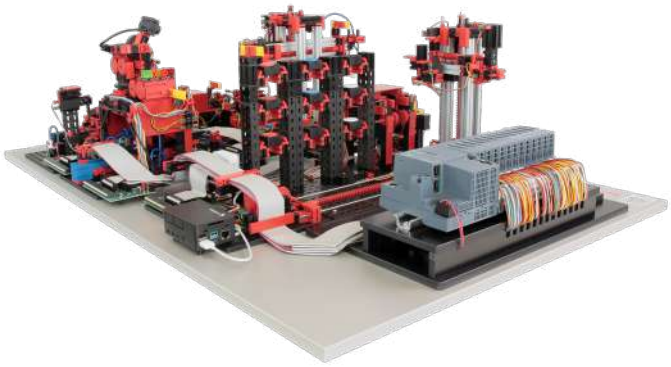
- Aluminium case with foam inlay
- 3 Internal zip pockets for stowing cables and accessories

Item no.	563147
EAN	4048962446883
Dim. (LxWxH) (mm)	1.190 x 790 x 370
Weight (g)	19.000

Training Factory 4.0 24V incl. S7-1500

Plug and play solution incl. control, cabling and codes.

24V



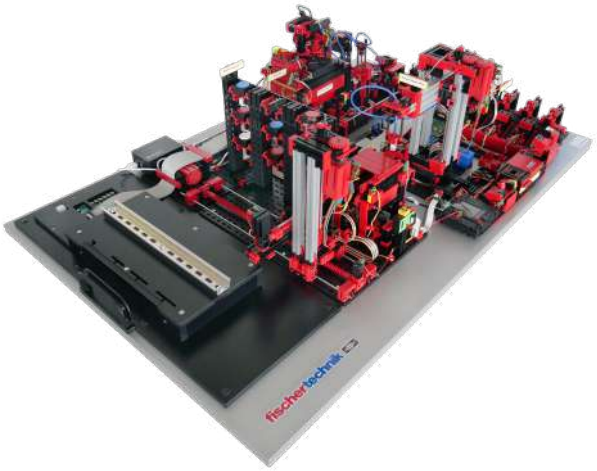
- PLC S7-1500
- Completed cabling on the model side and PLC side
- PLC basic programme (structured text)
- Raspberry Pi (IOT Gateway) and OPC-UA translation
- NFC/RFID reader and NFC tag
- 1x TXT 4.0 Controller: for cloud access and MQTT interface
- 1x Power supply unit 24V / 11 A

Item no.	560840
EAN	4048962429961
Dim. (LxWxH) (mm)	1.140 x 740 x 340
Weight (g)	29.000

Training Factory 4.0 24V with PLC connection board

Convenient connection of a suitable PLC.

24V



- PLC connection board
- Completed cabling on the model side and preparation of the PLC side
- PLC basic programme (structured text)
- Raspberry Pi (IOT Gateway) and OPC-UA translation
- NFC/RFID reader and NFC tag
- 1x TXT 4.0 Controller: for cloud access and MQTT interface
- 1x Power supply unit 24V / 11 A

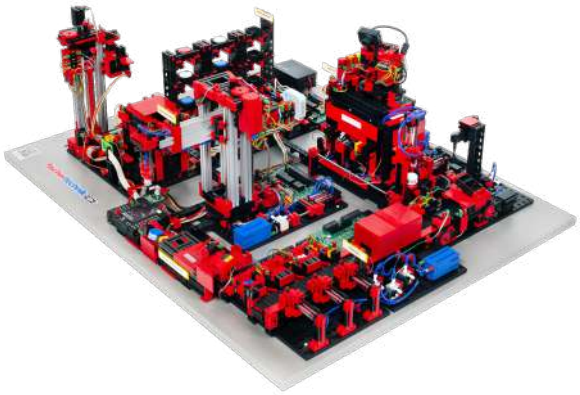
Item no.	560841
EAN	4048962250381
Dim. (LxWxH) (mm)	1.140 x 740 x 340
Weight (g)	33.000

* PLC control unit not included in the scope of delivery (brand-independent connections)

Training Factory 4.0 24V

Basis for customised solutions to gain understanding of industrial processes.

24V



- 24V Adapter boards pre-assembled as PLC interface
- PLC basic programme (structured text)
- Raspberry Pi (IOT Gateway) and OPC-UA translation
- NFC/RFID reader and NFC tag
- 1x TXT 4.0 Controller: for cloud access and MQTT interface

Item no.	554868
EAN	4048962395945
Dim. (LxWxH) (mm)	1.140 x 740 x 340
Weight (g)	24.800

* PLC control unit not included in the scope of delivery (brand-independent connections)

Training Factory 4.0 9V

Plug and play solution on a 9V basis with fischertechnik's own controllers and Python code.

9V

- NFC/RFID module and NFC tag
- Basic programmes in Python
- 6x TXT 4.0 Controllers: for cloud access, control of the models and MQTT interface

Item no.	567769
EAN	4048962480931
Dim. (LxWxH) (mm)	1.140 x 740 x 340
Weight (g)	26.000

* absolutely necessary: 3 x 9V / 2.5A power supply unit (Item no. 505287)

Optimising neural networks in production control

The Training Factory 4.0 as part of the first globally distributed neural production network at the University of Potsdam / Brandenburg (Germany)

Research / Application Area: Expansion of research into the application of artificial intelligence in production control | Deployment period: 2022

The challenge

A neural network is a programme or model for machine learning that makes decisions in a similar way to the human brain. Neural process simulations according to Grum (2022) prove that neural networks (ANN) can work productively and in a process-orientated manner. The University of Potsdam has conducted various research series on how process quality can be improved using neural networks. One of the experiments used distributed neural networks to control various locations around the world with different IT systems and to illustrate frictional losses in global production chains. To this end, simulation tools had to be found that could deliver valid research results and meet the requirements of the University of Potsdam both haptically and virtually.

The solution

The fischertechnik Training Factory 4.0 was used in combination with other simulation tools and a neural twin to simulate global production control processes. In a series of simulations on jam production, it was assumed that products are manufactured at four different production sites around the world, which have different IT systems. All processes were analysed, from the procurement of fruit to distribution to the customer. The fischertechnik Training Factory 4.0 was one of four networked haptic production stations. The process was simulated in the system, from storing the fruit and feeding it into the cooking machine for jam production to filling the jars and delivering the products.

The result

By conducting the designed experiments, the effects of inefficient knowledge flows under ANNbased Industry 4.0 systems can be systematically analysed. This enables not only the identification of weak points, but also the development of targeted strategies to optimise knowledge flows and improve overall productivity.

With the fischertechnik Training Factory 4.0, we can expand previous research into the control of artificial knowledge transfer as a coordination tool.

Prof. Dr. Grum,
Lecturer

AI training model

Quality control with AI

The fischertechnik simulation model demonstrates the advantages of artificial intelligence in the production environment in a low-threshold and impressive way. It is the ideal tool for understanding machine learning technology and creating your own AI models.

The use of artificial intelligence in the production environment increases process stability, efficiency and quality enormously. One example is the implementation of machine learning for the quality control of haptic products. This increasing use of artificial intelligence in production not only requires investment in new technologies, but also the training of employees to use these technologies.

KEY AREAS

- Improved image recognition
- Automated error detection
- Predictive maintenance
- Real-time monitoring
- Resource efficiency

product page

Quality control with AI 9V

Visualize AI models and make them sustainably comprehensible.

- TXT 4.0 Controller
- USB camera
- Encoder motor
- Compressor
- 4x 3/2-way solenoid valves
- 4x Pneumatic cylinders
- 5x Light barriers
  (5x Phototransistor + 5x LED light barrier)
- 4x LED for illumination of the camera field
- 24x Workpieces

- Python programs for the TXT 4.0 Controller
- Training programs in Python and Tensorflow
- Pre-trained model in Tensorflow Lite
- Dataset for training

Machine Learning Course

The fischertechnik model is powerful, smart and intuitive to use, making it ideal for teaching artificial intelligence.

Prof. Dr. Carsten Mueller
Mosbach Cooperative State University / Bad Mergentheim Campus (Germany)

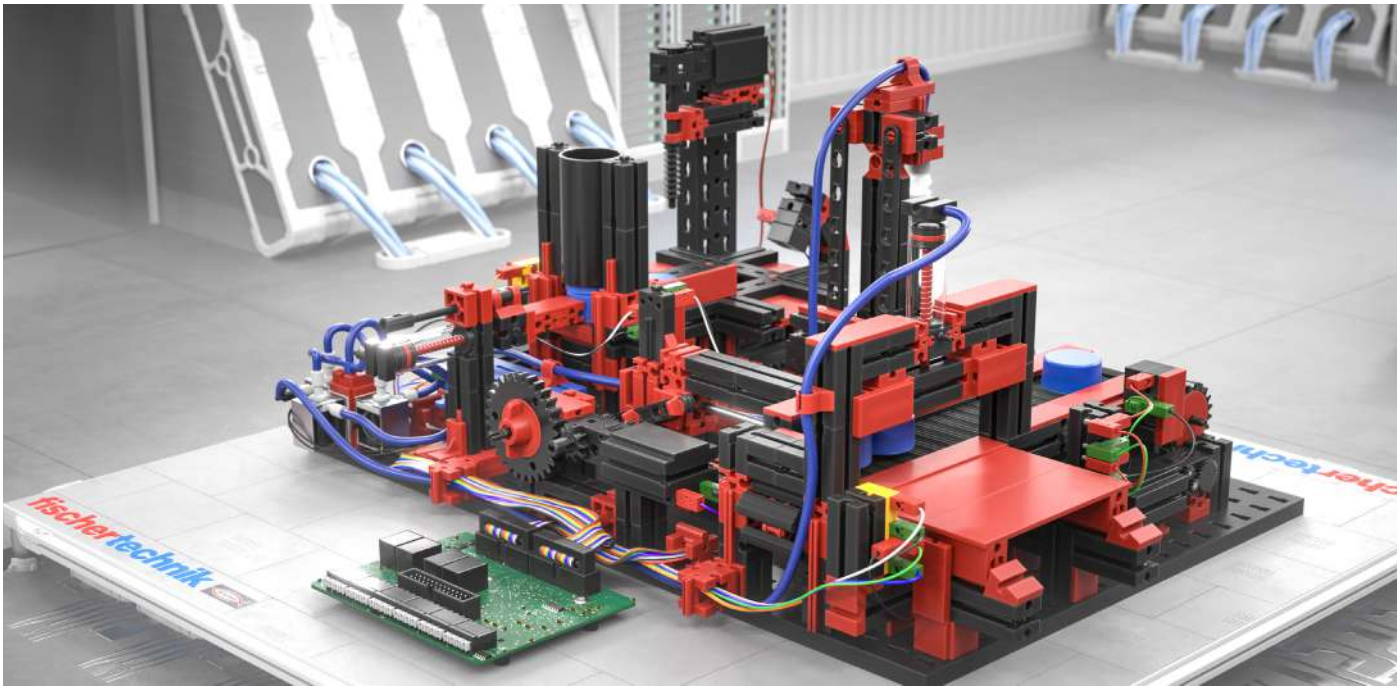
Item no.	568416
EAN	4048962487213
Dim. (LxWxH) (mm)	440 x 310 x 165
Weight (g)	4.770

* Power supply unit 9V / 2.5A mandatory

THINK, LEARN, ACT -
AI SHAPES THE FUTURE.

Training models 24V

PLC programming and virtual commissioning.



With fischertechnik simulation models, trainees, employees and students learn to programme and network miniature production systems in a safe learning environment. All fischertechnik simulation models are delivered fully assembled on a stable board.

Automation is the use of technologies and control systems to control or monitor processes or machines without human intervention. PLC programming is a technological basis for successful automation. This is used to control machines, regulate processes, collect data and communicate with other systems. Advancing industrial automation requires well-trained employees with new qualifications.

KEY AREAS

- Control and regulation
- PLC Programming
- Sensors and actuators
- Responsiveness
- Applications in various industries
- Advantages of automation

PLC programming

* PLC control 24V absolutely necessary

incl. comprehensive PLC course for structured text & comprehensive virtual commissioning course

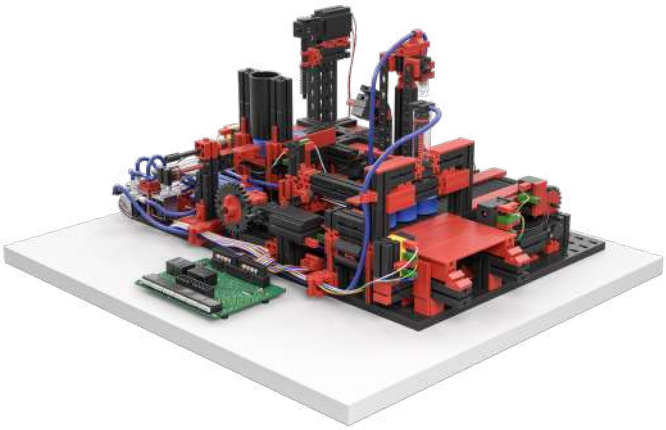
product page

Production Line 24V

Simulates optimally coordinated process steps.

NEW

- 5x Mini motor
- 5x Push button
- 4x Phototransistor
- 5x Light barrier LED
- 3x Solenoid valve
- 4x Pneumatic cylinder
- 1x Compressor

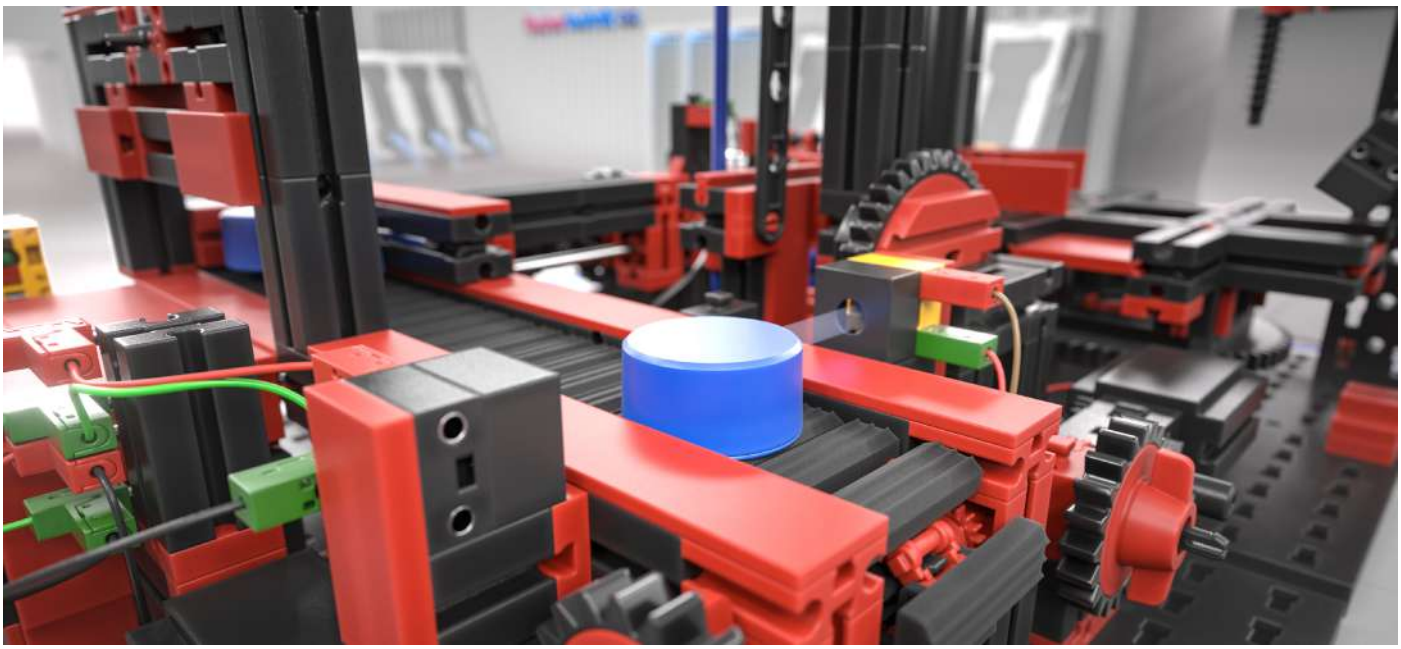


- 24V model prepared for control with a PLC (PLC requirements: 8 digital inputs and 10 digital outputs 24V)
- PLC programming course designed for structured text and function block diagram

Item no.	571910
EAN	4048962516715
Dim. (LxWxH) (mm)	450x410x224
Weight (g)	5.230

ATTENTION: A 24V PLC control unit with at least 8 digital inputs and 10 digital outputs is essential for operation.

PLC programming



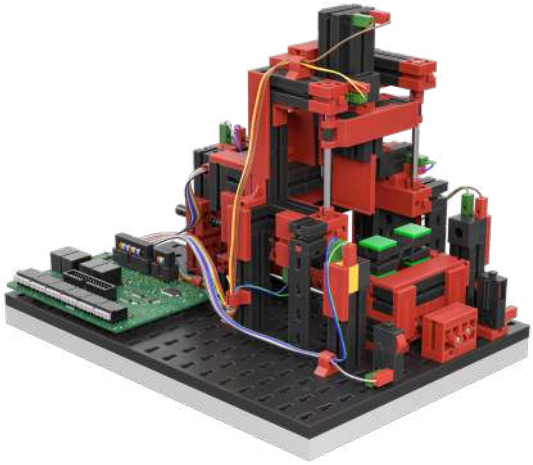
incl. comprehensive PLC course for structured text & comprehensive virtual commissioning course

product page

Bending Machine 24V

Transport and (semi-)automatic bending of workpieces.

NEW



- 2x Mini motor
- 4x Push button
- 3x Phototransistor
- 3x Light barriers LED

- 24V model prepared for control with a PLC (PLC requirements: 8 digital inputs and 4 digital outputs 24V)
- PLC programming course designed for structured text and function block diagram

Item no.	571911
EAN	4048962516722
Dim. (LxWxH) (mm)	258x202x186
Weight (g)	5.230

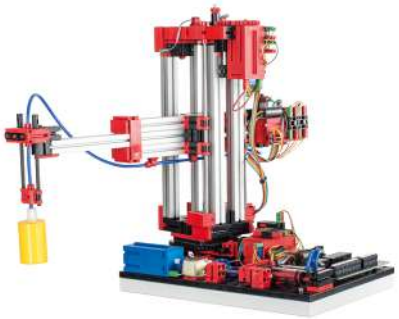
ATTENTION: A 24V PLC control unit with at least 8 digital inputs and 4 digital outputs is essential for operation.

PLC programming

product page

Vacuum Gripper Robot 24V

Safe and precise transport of workpieces.



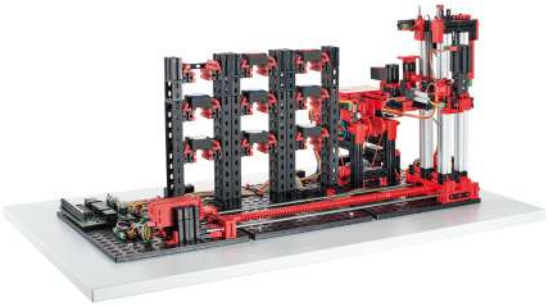
3x Encoder motor (DC motor with magnetic encoder), 3x Push button (limit switch), Vacuum exhauster, Compressor, Solenoid valve

Automated High-Bay Warehouse, Multi Processing Station with Oven, Sorting Line with Color Detection

Item no.	536630
EAN	4048962250374
Dim. (LxWxH) (mm)	222x482x382
Weight (g)	3.120

Automated High-Bay Warehouse 24V

Storage and retrieval of workpieces and containers.



2x Encoder motor (DC motor with magnetic encoder), 2x Mini motor (DC motor), 4x Push button (limit switch), 2x Phototransistor, 2x LED light barrier, 6x Workpiece carrier, 6x Workpiece

Vacuum Gripper Robot

Item no.	536631
EAN	4048962250381
Dim. (LxWxH) (mm)	472x722x382
Weight (g)	8.000

Sorting Line with Color Detection 24V

Recognition and sorting of the different workpieces.

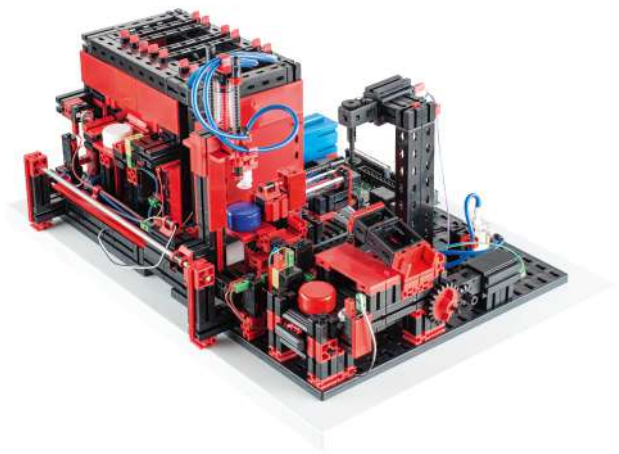
1x Mini motor (DC motor), 5x Phototransistor, 5x LED light barrier, 3x Solenoid valve, Compressor, Optical color sensor

Multi Processing Station with Oven, Vacuum Gripper Robot

Item no.	536633
EAN	4048962250404
Dim. (LxWxH) (mm)	502x342x302
Weight (g)	4.290

Multi Processing Station with Oven 24V

Two processing stations with pneumatic transfer for safe workpiece transfer.



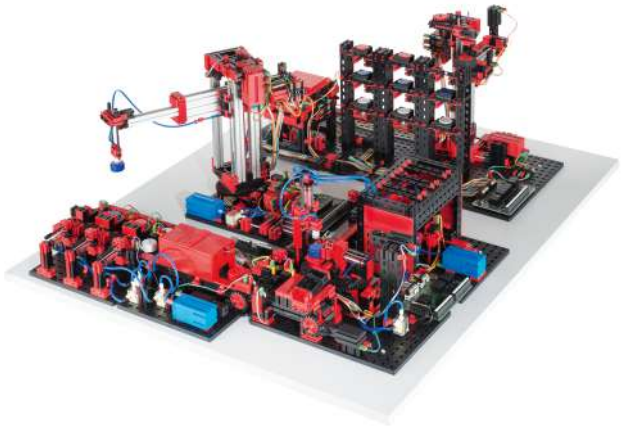
- 5x Mini motor (DC motor)
- 6x Push button (limit switch)
- 2x Phototransistor
- 2x LED light barrier
- 4x Solenoid valve
- Compressor

Sorting Line with Color Detection, Vacuum Gripper Robot

Item no.	536632
EAN	4048962250398
Dim. (LxWxH) (mm)	502x342x302
Weight (g)	4.680

Factory Simulation 24V

Automated training and simulation factory.

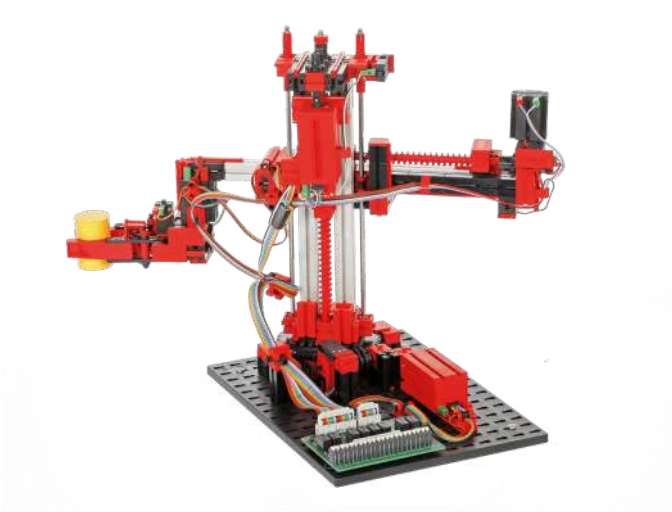


Combination of the models: Sorting Line with Color Detection, Multi Processing Station with Oven, Automated High-Bay Warehouse, Vacuum Gripper Robot

Item no.	536634
EAN	4048962250411
Dim. (LxWxH) (mm)	972x772x402
Weight (g)	19.500

3-Axis Robot 24V

Positions workpieces safely and precisely with the aid of a gripper.



- 2x Mini motor (DC motor)
- 2x Encoder motor (DC motor with magnetic encoder)
- 6x Push button (limit switch)

Conveyor Belt, Punching Machine, Indexed line

Item no.	511938
EAN	4048962111316
Dim. (LxWxH) (mm)	480x400x220
Weight (g)	2.700

Conveyor Belt 24V

Conveyor belt simulates the transport of the workpieces.

- 1x Mini motor (DC motor)
- 1x Push button (limit switch)
- 2x Phototransistor
- 2x LED light barrier

3-Axis Robot, Vacuum Gripper Robot

Item no.	50464
EAN	4006209504642
Dim. (LxWxH) (mm)	345x240x100
Weight (g)	670

Training models 9V

Factory simulation in handling axis robots.

product pages

The fischertechnik 9V training models are ideal for making the complex interrelationships of modern factory structures tangible. Whether it's artificial intelligence for quality assurance, the functioning of multi-axis robots or the digitalisation of the production environment: **fischertechnik 9V training models make you fit for the future.**

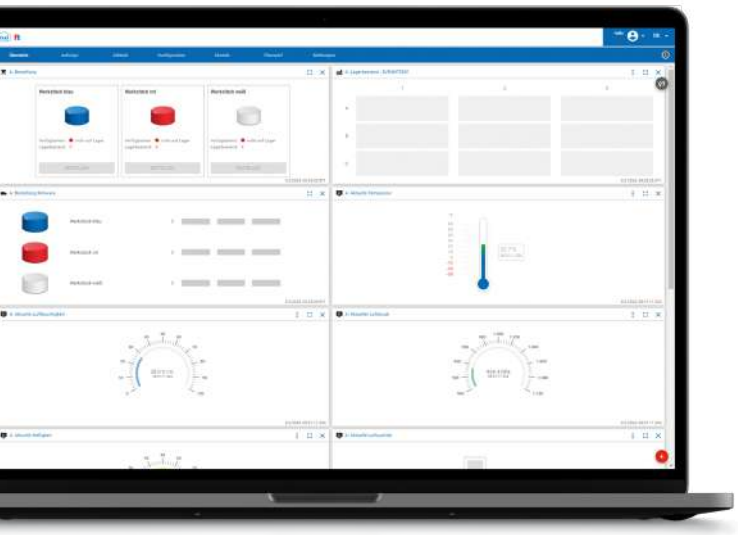
6-Axis Robot 9V

Discover the world of industrial robotics.

- 1x TXT 4.0 Controller
- 3x Encoder motor
- 3x Digital servo
- 2x End effector (Gripper / Vacuum suction pad)
- Compressor
- Solenoid valve
- 4x Pneumatic cylinders (2x Cylinder 60 with spring, 2x Cylinder 45)

Item no.	571894
EAN	4048962516548
Dim. (LxWxH) (mm)	480x220x385
Weight (g)	3.100

* not inlcuded: 9V Power supply (additionally required)



fischertechnik cloud

Mobilise data & optimise production processes

The Agile Production Simulation (APS) and the Training Factory Industry 4.0 can be connected to the fischertechnik cloud. All other fischertechnik training models can be connected to different clouds by programming them yourself. The APS and the Training Factory Industry 4.0 are equipped with an integrated WLAN router that can be used to connect to the fischertechnik cloud. Recommended for this is the use of web browsers such as Chrome or Firefox.

The cloud can be used via a personal login (www.fischertechnik-cloud.com) after initial registration on first use. The cloud services are located in Germany and therefore fulfil the strict European requirements for data storage. Personal data is protected by a password-protected account in accordance with the „OAuth2“ industry standard. All data transmitted to the cloud is encrypted using certificates.

Dashboard

The dashboards can be accessed and operated via mobile devices such as tablets and smartphones as well as on laptops and PCs and enable the display of different perspectives:

Agile Production Simulation	Training Factory Industry 4.0
Overview	Customer view
Orders	Supplier view
Processes	Production view
Configuration	Monitoring
Modules	
Simulation game	
Messages	

24V & 9V Models

PLC vs. fischertechnik controllers

Models that are supplied in the global 24V industry standard either already contain a Siemens PLC or are suitable for connection to all common PLC control systems. For this purpose, the 24V models have a circuit board with relays for reversing the direction of rotation of the motors. The inputs and outputs are led out on tub connectors (26-pin, 2.54 mm pitch) and also on terminal blocks with push-in connection. Models supplied in 9V standard voltage with TXT 4.0 Controller are perfect for programming with the graphical programming interface Robo Pro Coding, which is based on Blockly and is easy to learn, or for programming with Python.

Circuit plans and technical information can be found at **www.fischertechnik.de**.

Pre-assembled models

Simulate production processes quickly and efficiently

fischertechnik training models are delivered pre-assembled as compact functional models. For this purpose, they are fixed onto wooden boards using screws to increase stability, so that mobility to carry the models with you for projects, exhibitions or trade fairs is guaranteed at all times. The screws can be easily loosened to take advantage of the flexibility and modular design of fischertechnik, if an independent conversion and extension of further models is required at any time.

fischertechnik has been a „Made in Germany“ brand for 60 years and continues its manufacturing in Germany. Profit from the excellent high quality which makes fischertechnik simulation models extremely durable and well-known.

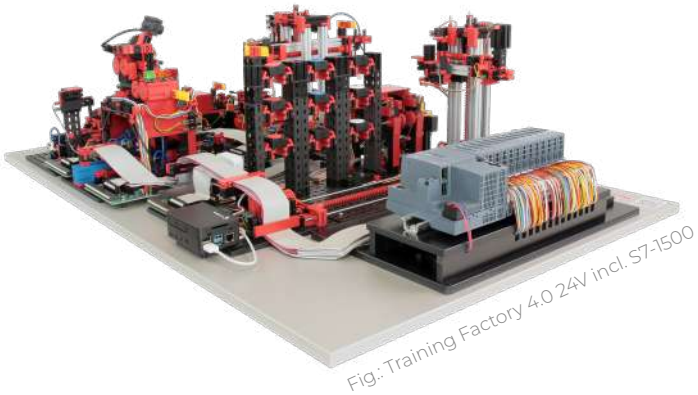


Fig.: Training Factory 4.0 24V incl. S7-1500

other
Success Stories

Success Stories

Training Factory 24V with Siemens S7-1500 PLC for vocational skills training at the Technical University of Moldava (MD) in Chisinau

Research / Application: Training Factory as part of the Laboratory „Industry 4.0 - Integrated Control Systems“ at the faculty of mechanical engineering and transport. The Training Factory serves as a research and teaching simulation environment to improve and understand the understanding of the Industry 4.0 concept including the various communication protocols. In combination with the learning environment, fischertechnik‘s cloud and the 12 workstations installed in the laboratory, a comprehensive teaching and learning environment is created to train the “engineer of the future” through “innovation in education”.

Learning factory as the basis for the realization of digital prototypes in the Builder Studio by Amazon Web Services in Melbourne (AU)

Research / Application Area: The application of innovative technologies such as digital twins for the development of new products and process optimization. The AWS Builder Studio offers companies a low-threshold entry into future-proof technologies. Managers, engineers and software developers have the opportunity to design and optimize products and processes in the digital space. Only when a customer is convinced by a solution they start to develop a real prototype from the digital one. In this way, innovations can be implemented at a manageable investment.

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