

Training Cases



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Training Cases

Important information

Preliminary information

Purpose of the documentation

This product information/documentation gives you an overview of all important points with regard to training equipment. The accompanying documentation must be read before commissioning and operation.

Purpose of the training equipment

The training equipment is a switchgear assembly which complies with EN 61439-1 in the maintenance and commissioning mode. It is aimed at electrically qualified personnel in the target groups:

- Planners
- Assemblers
- Start-up engineers
- Maintenance and service personnel
- Operators

Operating the training equipment

The equipment may only be operated in contamination class 2 facilities. The degree of contamination is described in the IEC 61010 standard:

Only non-conductive contamination.

Temporary conductivity due to condensation must occasionally be expected.

Furthermore, the training equipment and/or exhibits may only be connected and operated by qualified or specially trained personnel. The devices are not to be used for unattended continuous operation.

EMC / Radio Frequency Interference

Caution

This system is intended for use in the industrial sector. When operated in a residential area, it can cause radio frequency interferences. In this case, the operator may be required to take suitable measures.

General safety information

Qualified personnel

The product/system related to this documentation may only be handled by qualified personnel for the respective task in compliance with the associated documentation for the respective task, in particular, the safety and warning instructions contained in it.

Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding possible dangers when dealing with these products/systems.

Proper use

The system is a switchgear assembly which complies with EN 61439-1 in the maintenance and commissioning mode. In order to ensure maximum safety, the intended use of the product is indispensable.

The system has an IP20 degree of protection value and may only be operated in dry rooms with contamination class 2 and under supervision of a certified electrician. This device is intended for use in the field of training. It can cause radio frequency interferences. In this case, the operator may be required to take suitable measures.

Auxiliary materials and components used

The auxiliary materials and components used are listed in a parts list and are appended to the documentation.Vts

Product modifications

No modifications may be made to the product. Any modifications to the product would cancel the CE-conformity as well as the warranty.

Electrical voltages

Operation using low voltage (PELV or SELV; ≤ AC 50 V; ≤ DC 120 V)

When operating using low voltage, the generally known safety measures for dealing with electrical equipment must be observed.

Operation using 230/400 V

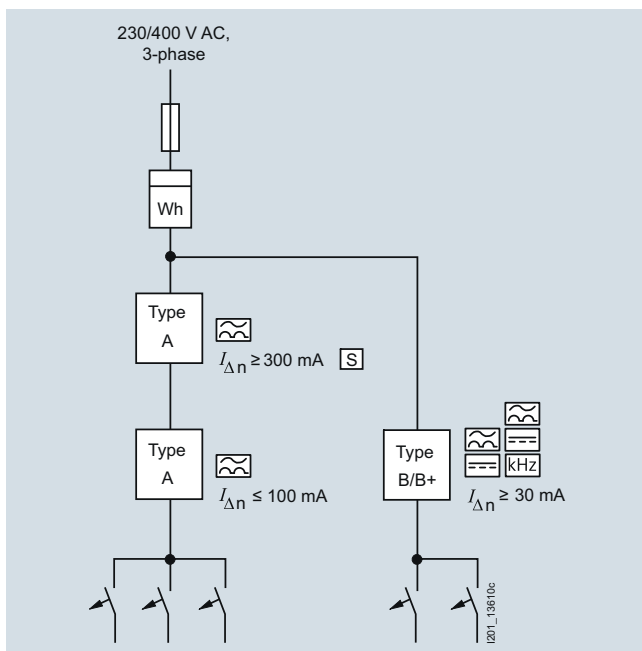
Qualified personnel must ensure that the device is only operated using a connection point with a series-connected residual current device (RCD Type B or B+; Rated current $I_{\Delta n} \leq 30 \text{ mA}$) or using an isolating transformer.

Universal current-sensitive, residual current device (RCD) Type B or B+

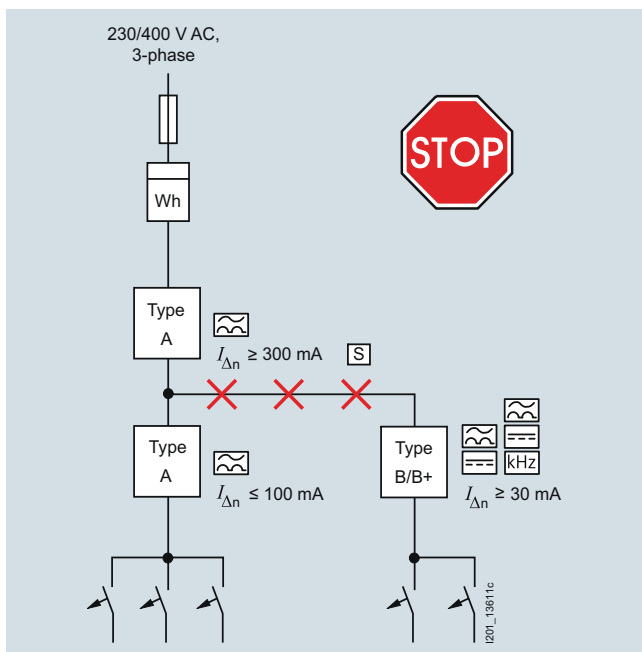
When using a frequency inverter (single and multi-phase) in the overall system, these are to be operated after a universal current-sensitive, residual current device (RCD) of the Type B or B+.

Equipment with frequency inverters can generate high frequency AC fault currents or smooth DC fault currents which are not detected by Type A and therefore do not initiate a trigger. Furthermore, these smooth DC fault currents lead to the pre-magnetization of the residual current device thus making it ineffective.

The connection must be made directly after the power connection point - for example, in the main distribution board. None of the protective devices (RCD Type A) can be seriesconnected!



When configuring and installing electrical installations, electrical loads that can generate smooth DC residual currents in the event of a fault must be assigned a separate electrical circuit with a universal current-sensitive residual current protective device (type B) (see configuration example).



It is not permitted to branch electrical circuits with these types of electrical loads after pulse-current-sensitive residual current protective devices (type A).

WARNING!

Danger to life due to fire or electric shock when using unsuitable residual current devices

The frequency inverter can cause a current in the protective conductor. This current can cause a fault tripping of the residual current devices (RCD). In case of failure (ground fault) the fault current can contain a DC component which prevents the desired triggering of the RCD/RCM with the result of a fire or electric shock.

Use an RCD of the Type B or B+.

Frequency converter with filter

When using a frequency converter with (integrated or external) filter, the ELCB - earth leakage circuit-breaker (RCD) is triggered when it is directly connected to the power supply system.

For this reason, the device may only be operated with an isolating transformer (separator transformer).

In this case, the device must **not be connected to a shielded Ethernet-/ Profibus-/ USB-cable** when the cable shield is connected to PE (e.g., via the computer or PG housing).

Short-circuit withstandability

The training equipment may only be operated on electric circuits whose rated short-time withstand current or rated short-circuit current does not exceed 10 kA and the maximum prospective short-circuit current does not exceed 17 kA.

This is generally ensured through a standards-compliant building installation with circuit-breakers.

Danger to life due to electric shock when using unsuitable overcurrent protective devices

Residual current devices (RCD) are not permitted as the sole protective measure against electric shock. Always install residual current devices in addition to suitable overcurrent protective devices (circuit-breakers).

Danger to life due to contact with voltage-carrying parts when using damaged devices

Improper handling of devices can lead to their damage. Hazardous voltages on the housing or on exposed components can be present with damaged devices.

- For transport, storage and operation, adhere to the limits specified in the technical data.
- Do not use any damaged devices

Proof test

Because this training equipment is a mobile device, the tests required according to DGUV Regulation 3 (of the German Social Accident Insurance) must be performed. The assessment criteria to be used are defined in DIN VDE 0701-0702.

Grid connection check

Before commissioning the system, check the mains connection (earthing contact socket) and the (cold device) supply line.

In this case, priority must be paid to a functioning protective conductor connection (PE)!

The test may e.g. be done by suitable socket testers! For the testing of the (cold device) supply line, an adapter from protective contact socket to IEC plug is necessary.

Training Cases

Important information

General safety information

Recycling and Disposal

Purchasing our product gives you the opportunity to return the instrument to collection points for waste electrical equipment at the end of its lifespan. Dispose of the device according to the respective regulations in your country.



The EU Directive 2012/19/EU (WEEE) regulates the return and recycling of waste electrical and electronics equipment. Manufacturers of electrical and electronics equipment are obliged to take back and recycle any electrical devices sold for no charge. Electrical devices must not be disposed of through the "normal" waste disposal channels. Electrical devices must be disposed of and recycled separately. All devices that fall under this directive must feature this logo.

Service, Repairs

Repairs>Returns

Repairs to the device may only be carried out by Siemens authorized qualified personnel. In case of a defect, please contact us in order to clarify the necessary measures.

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SIMATIC S7 Training Case S7-1500
SIMATIC S7 Safety Training Case S7-1500F
Application


The training case is used to realistically practice the programming, operating and commissioning of SIMATIC S7-1500 controllers within TIA Portal.

Design

The training case consists of:

- SIMATIC CPU 1513F-1 PN with PM1507, digital and analog I/Os
- ET 200SP with IM 155-6 PN, digital and analog I/Os
- TP700 Comfort Panel
- PROFINET connecting cable
- Simulator

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	600 × 420 × 340
Weight	18 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Training Case S7-1500

- with transport box
- without transport box

6ZB2310-0CW00
6ZB2310-0DK00

Application


The training case is used to realistically practice the programming, operating and commissioning of fail-safe SIMATIC S7-1500 controllers within TIA Portal.

Design

The training case consists of:

- SIMATIC CPU 1513F-1 PN
- ET 200SP with IM 155-6 PN with digital F-I/Os
- TP700 Comfort Panel
- Non-Contact Safety Switch SIRIUS 3SE6

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	700 × 640 × 330
Weight	30 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Training Case S7-1500F Safety

- with transport box
- without transport box

6ZB2310-0CV00
6ZB2310-0DJ00

Training Cases

SIMATIC

SIMATIC S7 Safety Periphery Case S7-1500F

Application



The training case is used to simulate realistically periphery to practice the programming, operating and commissioning of failsafe SIMATIC S7-1500 controllers within TIA Portal.

Design

The training case consists of:

- ET 200SP with IM 155-6PN with digital and analog F-I/Os
- Non-Contact Safety Switch SIRIUS 3SE6

A SIMATIC S7-1500 F-CPU is required. It is not included in the case.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	400 × 700 × 330
Weight	25 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data Article No.

SIMATIC S7 Safety Periphery Case **6ZB2310-0CT00**

SIMATIC S7 Training Case S7-1200

Application



The training case is used to realistically practice the programming, operating and commissioning of SIMATIC S7-1200 controllers.

Design

The training case comprises a SIMATIC S7-1200 automation system. The automation system is mounted in a carrying case for transportation purposes. It consists of:

- S7-1200 Power Supply
- CPU1214
- Analog output SB1234
- Analog input / output module SM 1234
- Digital input / output module SM 1223
- Switch CSM 1277
- Basic Panel KTP600
- Interface for conveyor belt model

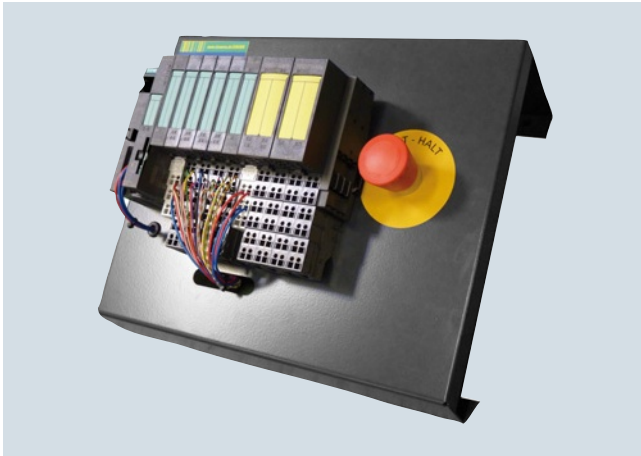
Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	390 × 310 × 290
Weight	6 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data Article No.

Training Case S7-700 with CPU 1214 **6ZB2310-0CG00**

SIMATIC S7 Training Module ET 200S PNIO
Motion Control Module for S7-1200/S7-1500 TC
Application


The training case is used to realistically practice the programming, operating and commissioning of distributed I/Os. It serves as an extension of the SIMATIC S7-1200 training devices.

Design

The training module comprises a modular ET 200S and a 37-pin clamp-type terminal block for connecting a simulation model. It consists of:

- Interface module IM 151-3 PN
- Power module PM-E 24 V DC
- 2 Digital input modules 4 DI × 24 V DC
- 2 Digital input modules 4 DO × 24 V DC / 0.5 A
- Power module PM-E 24V DC
- 1 Digital input modules 4/8 F-DI × 24 V DC
- 1 Digital input modules 4 F-DO × 24 V DC / 2 A
- DI/DA clamp-type terminal block, 37-pin

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	24 V DC
Approved ambient temperature	
• Storage and transportation	-20 ... +60 °C
• Operation	5 ... 40 °C
Dimensions in mm (W × H × D)	280 × 200 × 355
Weight	4 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data Article No.

Training Module ET 200S PNIO **6ZB2310-0CJ00**

Application


The training module is used to work with the Technology Functions (Motion Control Axis and PID Loop Control) of the SIMATIC S7-1200 in realistically practice exercises. It serves as an extension of the SIMATIC S7-1200 and SIMATIC S7-1500 training devices.

Design

It consists of:

- SIMATIC CPU 1211C DC/DC/DC
- Stepper motor with 360° disc and pulse encoder
- Sensor for the neutral position
- RC element with printed circuit
- 230 V AC power supply

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	390 × 210 × 310
Weight	6 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data Article No.

Motion Control Module for S7-1200/S7-1500 training device **6ZB2310-0CP00**

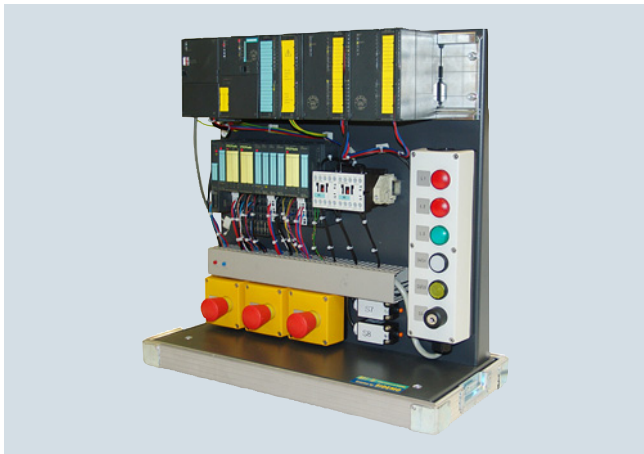
Training Cases

SIMATIC

SIMATIC S7 Training Case S7-300F

PROFINET Training Case S7-300

Application



The training case is used to realistically practice the programming, operating and commissioning of fault-tolerant S7-300 controllers.

Design

The training case comprises a SIMATIC S7-300F automation system, emergency cutoff buttons, contactors, door switches and signal displays. The automation system is mounted in a carrying case for transportation purposes. It consists of:

- Mounting rail SIMATIC S7
- Operational power supply PS 307
- Switch SCALANCE X208
- Main module CPU 315F-2 PN/DP
- Bus slot
- Top assembly IM 151, PROFINET IO
- Power module, incl. terminal module
- F-DI modules, incl. terminal modules
- F-DO modules, incl. terminal module
- F power module
- DI module, incl. terminal modules
- DO module, incl. terminal modules
- Emergency cutoff switch
- Reset
- Contacts
- Mechanical systems

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	520 × 410 × 350
Weight	approx. 15 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

SIMATIC S7 Training Case S7-300F

6ZB2310-0CQ00

complete, incl. emergency cutoff switch, contacts, door switches and signal displays

Application



The training case is used to demonstrate and to practice PROFINET within Totally Integrated Automation.

Design

The training case consists of:

- SIMATIC CPU 315-2PN/DP
- ET 200S with IM 151-3PN with digital I/Os
- PROFINET connecting cable
- Simulator

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	250 × 350 × 300
Weight	approx. 7 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

PROFINET Case S7-300

6ZB2520-0AH00

Training Case OPC UA

HMI Stand with MTP700

Application



The training case is used to practice the engineering and programming of several SIMATIC products as OPC UA server or client.

Design

The training case consists of:

- SIMATIC S7-1500 CPU 1513F-1 PN
- SIMATIC S7-1200 CPU 1214C
- SIMATIC RF600 reader RF615R incl. antenna
- Leuze 2D codereader
- SCALANCE XB008 Switch

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 55 °C
Dimensions in mm (W × H × D)	460 × 670 × 340
Weight	approx. 23 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Training Case OPC UA

6ZB2520-0AK00

Application



Stand with Unified Comfort Panel MTP700 for desk-engineering, for demonstration purposes or HMI trainings in addition to the S7-1500 training case.

Design

The stand is made of aluminium sheet in the color deep black RAL9005 with adjustable feets made of 20 mm aluminium profiles and contains an already mounted Unified Comfort Panel MTP700 (6AV2128-3GB06-0AX0). Two Ethernet interfaces, two USB ports and the power supply are placed outwards on the sides. The back is freely accessible, memory card slots and other interfaces can be used. The inclination of the stand is individually adjustable, so that reflections such as ceiling lighting can be avoided.

- Stand with Unified Comfort Panel
- Two power cables (red/black 2 mm banana plugs each)
- Two Ethernet cables 1 m
- Transport case (Tanos Systainer size 3 incl. suitable foam insert)
- Labels at interfaces

Additionally required:

- DC 24 V power supply (max. approx. 1 A power requirement), e.g. from the S7-1500 training case
- USB stick/SIMATIC SD memory card for functions such as archiving, automatic backup

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	24 V DC
Approved ambient temperature	0 ... 35 °C
Dimensions in mm (W × H × D)	372 × 255 × 110/260 (folded/unfolded)
Weight	5 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Support holder with Unified Comfort Panel MTP700 and transport case

6ZB2310-0DH00

Training Cases

SIMATIC

DCS Digital Base Unit Entry

Application



The DCS Digital Base Unit Entry is used to provide practical training in the configuration of a SIMATIC PCS 7 process control system using a real CPU 410 Entry PLC.

The Training Case offers support for all SIMATIC PCS 7 standard courses, although it does not include a SIMATIC PCS 7 installation.

Design

It comprises the following main components:

- AS rack with CPU 410 Entry (with 200 PO, not exchangeable)
- ET 200M distributed I/O for PROFIBUS with 2 signal modules (DI/DO/), with diagnostics capability
- ET 200M distributed I/O for PROFINET with 2 signal modules (AI/AO)
- Signal box for connection to distributed I/O via a connecting cable and 4 front end plugs

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	480 × 560 × 460
Weight	25 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

**DCS Digital Base Unit Entry
(incl. Signalbox)**

6ZB2320-0AT00

DCS Digital Base Unit neo

Application



The DCS Digital Base Unit neo is used to provide practical training in the configuration of a SIMATIC PCS neo process control system using a real CPU 410-5H PLC.

The Training Case offers support for all SIMATIC PCS neo standard courses, although it does not include a SIMATIC PCS neo installation.

Design

It comprises the following main components:

- AS rack with CPU 410-5H (with System Expansion Card for 100 PO) and current Firmware version ≥ V10, as it is required for SIMATIC PCS neo
- ET 200M distributed I/O for PROFIBUS with 2 signal modules (DI/DO/), with diagnostics capability
- ET 200M distributed I/O for PROFINET with 2 signal modules (AI/AO)
- Signal box for connection to distributed I/O via a connecting cable and 4 front end plugs

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	480 × 560 × 460
Weight	25 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

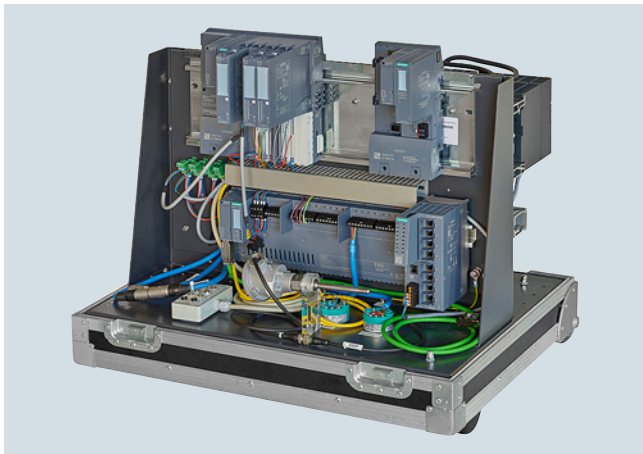
Article No.

**DCS Digital Base Unit neo
(incl. Signalbox)**

6ZB2320-0AR00

DCS Digital Field Unit

Application



Standard training equipment for the SIMATIC PCS 7 course portfolio. The transportable case can be combined with any automation system with a PROFIBUS DP interface.

The DCS Digital Field Unit is used for practical training of field level configuration of a process control system and connection to a real CPU 410-5H controller. For this purpose, it can be combined with the SIMATIC PCS7 Case Level 2 CPU410 or another training device which contains a CPU 410-5H automation system.

The training case offers support for all SIMATIC PCS 7 standard courses. SIMATIC PCS 7 service courses are the preferred field of application.

Design

The training case comprises the following main components:

- 1 ET 200SP HA PROFINET IO Device
- 1 digital input module
- 1 configurable I/O-module
- 1 SIMATIC Compact Field Unit
- 1 ET 200M PROFIBUS Slave with
- 1 HART analogue input module
- 2 DP/PA couplers
- 1 active field distributor AFD4
- 1 PT100 temperature sensor
- 1 transmitter TH300 for HART
- 1 transmitter TH400 for PROFIBUS PA

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	620 × 675 × 640
Weight	24 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

DCS Digital Field Unit **6ZB2320-0AQ00**

DCS Digital Signalbox

Application



The DCS Digital Signal box is used to provide practical training in the configuration of process control systems SIMATIC PCS neo or SIMATIC PCS 7 based on the connection to process signals.

It offers support for all SIMATIC PCS 7 and SIMATIC PCS neo standard courses. Installing software is not included.

Design

The DCS Digital Signal Box includes the following main components:

- 2 Digital potentiometers for one analog input signal each.
- 2 Digital displays for one analog output signal each
- 11 Controls (Switch/Button) for operating binary signals
- 7 LEDs for displaying binary signals
- 1 Relay, for providing 2 binary input signals and evaluating a binary output signal
- 4 Controls for emulation of errors (wire break, power failure)
- No own power supply necessary. The supply voltage DC 24 V/0.5 A is obtained from the connected signal modules.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	345 × 145 × 145
Weight	1,5 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

DCS Digital Signalbox **6ZB2320-0AS00**

Training Cases

SINAMICS

Training Case SINAMICS with CU320-2

Application



The training case is used to practice and demonstrate the parametrizing, operating and diagnostics of SINAMICS S120 with control unit CU320-2.

Design

- SINAMICS CU320-2 PN with memory-card (with project for function test)
- Smart Line Module 5 kW modified for 230 V / 1 AC
- Double Motor Module 2x 3A
- 2 motors 1FK7022, DRIVE-CLiQ encoder absolute/incremental
- Strobe for test synchronism
- ET 200SP IM 155-6PN with 4 Boards DI, DQ, TM, AI
- S7-Profil Rail 85 mm with 24 V and PN connection
- Operator box, detachable for I/Os of CU320-2 or ET200

The delivery takes place in a robust trolley case for transport and storage.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W x H x D)	330 x 400 x 620 (stored in the trolley)
Weight	34 kg (with trolley)

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Selection and ordering data	Article No.
Training Case SINAMICS with CU320-2	6ZB2480-0CU00

Training Case SINAMICS with SIMATIC Drive Controller

Application



The training case is used to practice and demonstrate the parametrizing, operating and diagnostics of SINAMICS S120 with SIMATIC Drive Controller.

Design

- SIMATIC Drive Controller with memory-card (with project for function test)
- Smart Line Module 5 kW modified for 230 V / 1 AC
- Double Motor Module 2x 3A
- 2 motors 1FK7022, DRIVE-CLiQ encoder absolute/incremental
- Strobe for test synchronism
- ET 200SP IM 155-6PN with 4 Boards DI, DQ, TM, AI
- S7-Profil Rail 85 mm with 24 V and PN connection
- Operator box, detachable for I/Os of controller or ET200

The training case is delivered in a robust trolley case for transport and storage.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 AC 230 V / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W x H x D)	330 x 400 x 620 (stored in the trolley)
Weight	34 kg (with trolley)

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Selection and ordering data	Article No.
Training Case SINAMICS with SIMATIC Drive Controller	6ZB2480-0CV00

Training Case SINAMICS without Control Unit
Application


The training case is used to practice and demonstrate the parametrizing, operating and diagnostics of SINAMICS S120. In addition, a control unit is required.

Design

The training case is supplied without control unit - a supplement with e.g. CPU 1507D / NCU 1760 / SIMOTION D is necessary.

- Smart Line Module 5 kW modified for 230 V / 1 AC
- Double Motor Module 2x 3A
- 2 motors 1FK7022, DRIVE-CLiQ encoder absolute/incremental
- Strobe for test synchronism
- ET 200SP IM 155-6PN with 4 Boards DI, DQ, TM, AI
- S7-Profil Rail 85 mm with 24 V and PN connection
- Operator box, detachable for I/Os of controller or ET200

The delivery takes place in a robust trolley case for transport and storage.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W x H x D)	330 x 400 x 620 (stored in the trolley)
Weight	34 kg (with trolley)

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

**Training Case SINAMICS
without Control Unit** **6ZB2480-0DA00**

Training Case Asynchronous Motor ASM
Application


The training case serves as a supplement to the SINAMICS S120 training case for applications and asynchronous motors. Together, both training cases are used for training and acquisition of the SINAMICS S120 Vector Control drive system and, in conjunction with the AOP30, for simulating SINAMICS S120 cabinet devices. They are also suitable for use in laboratory testing.

Design

- Normed asynchronous motor 1LE1002-0BB22-2AA4-Z with KTY temperature sensor and HTL incremental transmitter
- Cabinet mounted SMC30 sensor module for transmitter connection via DriveCLiQ
- DC 24 V connector cable for SMC30
- External momentum can be regulated by mechanical brake

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	24 V DC
Dimensions in mm (W x H x D)	377 x 210 x 277
Weight	approx. 12 kg

¹⁾ The 24-supply can be supplied e.g. by the training kit SINAMCIS S120, that has suitable sockets integrated.

Selection and ordering data

Article No.

Training Case ASM **6ZB2480-0CB00**

Training Cases

SINAMICS

Training Case SINAMICS G120 TIA with PM240-2

Application



This training case is used for training of the SINAMICS G120

Design

Compact training case SINAMICS G120 TIA with PM240-2

- Power Module PM240-2 1 AC 230 V
- Control Unit CU240E-2 PN F
- Induction motor 1LA7 with encoder and brake
- Switches and LEDs for control via terminal strip
- SIMATIC S7 CPU 1211C
- The Control Unit is connected via a Sub-D connector to the case. Therefore easy interchange to other CUs with adapter cable.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	0 ... 60 °C
Dimensions in mm (W × H × D)	390 × 310 × 290
Weight	approx. 12 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

	Article No.
SINAMICS G120 TIA Training Case with PM240-2	6ZB2480-0CS00

Accessories for Training Case SINAMICS S120

Application

Adapter plate

Temporary operation with another control unit instead of replacement of the installed control unit.

Universal adapter cable

Lateral mounting of a control unit using an adapter plate on the current training case from 2020 e.g. 6ZB2480-0CU00. Conversion of the previous case delivered by 2019 e.g. 6ZB2480-0CN00.

Construction angle

Temporary operation with another control unit instead of replacing the built-in control unit. Additionally, an adapter cable is required: 6ZB2480-0CW00. The angle was previously offered in the SIMOTION upgrade kit.

Design

Adapter plate

Adapter plate for mounting an additional control unit on the side of the current SINAMICS S120 training case: e.g. 6ZB2480-0CU00. For frequent use, electrical connection via a second adapter cable is recommended: 6ZB2480-0CW00. For transportation in the trolley case, the adapter must be removed.

Universal adapter cable

Universal adapter cable from SINAMICS S120 training case with 37-pole sub D connector to terminals of the control unit: SINAMICS CU320-2, SIMATIC Drive Controller, SINUMERIK ONE, SINUMERIK 840D sl, SIMOTION D
Length: approx. 80 cm

Construction angle

Construction angle for mounting another control unit on the side of the discontinued training case SINAMICS S120 delivered until 2019, e.g. 6ZB2480-0CN00.

Selection and ordering data

Article No.

Adapter plate for Training Case SINAMICS S120	6ZB2480-0CX00
Universal adapter cable	6ZB2480-0CW00
Construction Angle for Training Case SINAMICS S120	6ZB2480-0CY00

Training Case SINUMERIK ONE
Application


The training case is used to practice and demonstrate the programming, operating and diagnostics of SINAMICS S120 with control unit CU320-2.

Design

SINUMERIK ONE NCU 1750 with current software (Export, incl. license and SINUMERIK OPERATE)

- Smart Line Module 5 kW modified for 230 V / 1 AC
- Double Motor Module 2x 3A
- 2 motors 1FK7022, DRIVE-CLiQ encoder absolute/incremental
- Strobe for test synchronism
- ET 200SP IM 155-6PN with 4 boards DI, DQ, TM, AI
- S7-Profil Rail 85 mm with 24 V and PN connection
- Operator box, detachable for I/Os of NCU 1750 or ET200

The training case is delivered in a robust trolley case for transport and storage.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	330 × 400 × 620 (stored in the trolley)
Weight	34 kg (with trolley)

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Training Case
SINUMERIK ONE

6ZB2410-0BN00

Training Rack SINUMERIK ONE
Application


The training rack SINUMERIK ONE is suited for practical exercises for setup incl. Safety, operating, programming and maintenance.

Design

- Rack
- SINUMERIK ONE NCU 1750
- Active line module 16 kW, active interface module, single motor module 3A, double motor module 5A/5A, regenerative feedback is possible
- 1 SIMOTICS S synchronous motor 1FK7044-4CF71-1CB0 with absolute encoder 24 Bit + 12 Bit Multi-Turn
- 1 SIMOTICS S synchronous motor 1FK7044-4CF71-1BB0 with absolute encoder Single-Turn 24 Bit with Drive-CLiQ
- SIMOTICS induction motor 1LE1002-0CB22-2AK4-Z connected with SINAMICS sensor module SMC30
- Simulator connected to NCU and PLC periphery SIMATIC ET 200SP
- TFT display with touch operation SIMATIC ITC 2200 V3, microbox PC SIMATIC IPC427E and machine control panel SINUMERIK MCP 2200c with 2 powerrides

The training rack is delivered build on caster, configured and ready to operate.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	3 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	965 × 1790 × 630
Weight	approx. 200 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

Training Rack
SINUMERIK ONE

6ZB2410-0BQ00

Training Cases

SINUMERIK

Training Case SINUMERIK 840D sl

Application



The training case is used to practice and demonstrate the programming, operating and diagnostics of SINUMERIK 840D sl with the drive system SINAMICS S120.

Design

SINUMERIK 840D sl NCU 720 with current software (Export, incl. license and SINUMERIK OPERATE)

- Smart Line Module 5 kW modified for 230 V / 1 AC
- Double Motor Module 2x 3A
- 2 motors 1FK7022, DRIVE-CLiQ encoder absolute/incremental
- Strobe for test synchronism
- ET 200SP IM 155-6PN with 4 Boards DI, DQ, TM, AI
- S7-Profil Rail 85 mm with 24 V and PN connection
- Operator box, detachable for I/Os of NCU 720 or ET200

The delivery takes place in a robust trolley case for transport and storage.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	330 × 400 × 620 (stored in the trolley)
Weight	34 kg (with trolley)

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

**Training Case
SINUMERIK 840D sl**

Article No.

6ZB2410-0BP00

Training Case SINUMERIK OP Touch

Application



The training case SINUMERIK OP Touch is used as an operating unit together with the "Training Case SINUMERIK ONE" (Article No. 6ZB2410-0BN00) and "Training Case SINUMERIK 840D SL" (Article No. 6ZB2410-0BP00) training devices in order to practice the commissioning and servicing of the SINUMERIK ONE and SINUMERIK 840D sl. The training cases can also be used for demonstrations.

Design

- Weight- and volume-optimized case
- Build on casters, ready to operate
- Regenerative feedback is not possible
- TFT display with touch operation SIMATIC ITC 2200 (neutral version)
- Microbox PC SIMATIC IPC427E with latest SINUMERIK operate software
- Machine control panel SINUMERIK MCP 398C with extension module SINUMERIK EM 131

The training case is delivered ready for demonstration.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	1 230 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	680 × 400 × 760
Weight	36 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

**Training Case
SINUMERIK OP Touch**

Article No.

6ZB2410-0BL00

Training Rack SINUMERIK 840D sl Touch
Application


The training rack SINUMERIK 840D sl Touch is suited for practical exercises for setup, operating, programming and maintenance.

Design

- Rack
- SINUMERIK NCU 720.3B
- Active line module 16 kW, active interface module, single motor module 3A, double motor module 5A/5A, regenerative feedback is possible
- 1 SIMOTICS S synchronous servo motor 1FK7044-7AF71-1DG0 with incremental encoder sin/cos 1 Vpp and DRIVE-CLiQ interface
- 1 SIMOTICS S synchronous servo motor 1FK7060-5AF71-1FH0 with absolute encoder 2048 and DRIVE-CLiQ interface
- SIMOTICS induction motor 1LE1002-0CB22-2AK4-Z encoder connected with SINAMICS sensor module SMC30
- Simulator connected to NCU and PLC periphery SIMATIC ET 200SP
- TFT display with touch operation SIMATIC ITC 2200 V3, microbox PC SIMATIC IPC427E and machine control panel SINUMERIK MCP 398C

The training rack is delivered build on caster, configured and ready to operate.

Technical specifications

Protection class in accordance with DIN VDE 0470 Part 1/EN 60529/IEC 529	IP20
Input voltage ¹⁾	3 400 V AC / 50 Hz
Approved ambient temperature	5 ... 40 °C
Dimensions in mm (W × H × D)	660 × 1 720 × 600
Weight	155 kg

¹⁾ Please observe the connecting conditions of the local energy supplier.

Selection and ordering data

Article No.

**Training Rack
 SINUMERIK 840D sl Touch**
6ZB2410-0BM00

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Published by
Siemens AG

Digital Industries
Customer Services
P.O. Box 31 80
91050 Erlangen
Germany

For the U.S. published by
Siemens Industry Inc.
100 Technology Drive
Alpharetta, GA 30005
United States

Produced in Germany
© Siemens 2021

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