



Trainer del convertitore di frequenza

Schede di azionamento AC monofase e trifase



ETS DIDACTIC

Frequency converter

1-Phase and 3-Phase AC Drive Boards



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another way to care

www.abintrax-didact.com



Abintrax
DIDACT

FREQUENCY CONVERTER

AC Drive Board 1-phase - 230 V



1

Technical data:

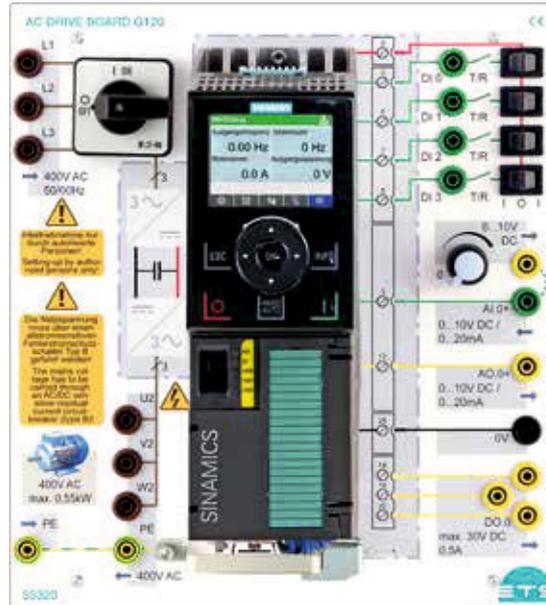
- › Intelligent Operator Panel (IOP-2)
- › Individual parameter setting
- › Commissioning
- › Surveillance of parameters during ongoing operation
- › Input via 2 function keys and rotary switch
- › LCD display
- › Profinet interface, 2 ports with integrated switch
- › DRIVE-CLiQ interface
- › Control and automated control functions
- › U/f linear / square / programmable
- › U/f with Flux Current Control (FCC)
- › Vector control, without encoder
- › Vector control, with encoder
- › Closed-loop torque control, without encoder
- › Closed-loop torque control, with encoder
- › Software functions
- › 16 fixed frequencies
- › Interconnecting signals with BICO technology
- › Positioning ramp down
- › Slip compensation
- › Free function blocks for logical and arithmetic operations
- › Technology control - PID
- › Flying restart / JOG
- › Brake functions
- › DC breaking
- › Compound breaking
- › Resistor breaking with integrated brake chopper
- › Fail-safe stop
- › Inputs and outputs
- › Encoder input
- › 4 digital inputs
- › 1 relay output
- › 1 analog input, 0-10V or 0-20mA
- › 1 analog output, 0-10V or 0-20mA
- › Electrical data
- › Input voltage/ frequency: 200-240V / 47-63Hz
- › Output voltage/ frequency: 0-230V / 0-50Hz
- › Output power: 550W

No.	Designation	Order No.
1	AC Drive Board G120, 1-phase	55326



FREQUENCY CONVERTER

AC Drive Board 3-phase - 400 V



1

Technical data:

- › Intelligent Operator Panel (IOP-2)
- › Individual parameter setting
- › Commissioning
- › Surveillance of parameters during ongoing operation
- › Input via 2 function keys and rotary switch
- › LCD display
- › Profinet interface, 2 ports with integrated switch
- › DRIVE-CLiQ interface
- › Control and automated control functions
- › U/f linear / square / programmable
- › U/f with Flux Current Control (FCC)
- › Vector control, without encoder
- › Vector control, with encoder
- › Closed-loop torque control, without encoder
- › Closed-loop torque control, with encoder
- › Software functions
- › 16 fixed frequencies
- › Interconnecting signals with BICO technology
- › Positioning ramp down
- › Slip compensation
- › Free function blocks for logical and arithmetic operations
- › Technology control - PID
- › Flying restart / JOG
- › Brake functions
- › DC breaking
- › Compound breaking
- › Resistor breaking with integrated brake chopper
- › Fail-safe stop
- › Inputs and outputs
- › Encoder input
- › 4 digital inputs
- › 1 relay output
- › 1 analog input, 0-10V or 0-20mA
- › 1 analog output, 0-10V or 0-20mA
- › Electrical data
- › Input voltage/ frequency: 200-240V / 47-63Hz
- › Output voltage/ frequency: 0-230V / 0-50Hz
- › Output power: 550W

No.	Designation	Order No.
1	AC Drive Board G120, 3-phase	55321



EXPERIMENTS WITH FREQUENCY CONVERTER

AC Transfer System



1

Technical data

- › AC gear motor
- › 3 x 230V (delta operation)/3 x 400V (star operation)
- › Heavy-duty connectors for load circuit or frequency converter
- › 2 detection modules for end position recognition with 3-wire sensor, M12 connectors and supporting brackets
- › 2 x M12 DI
- › M12 interface, 8-fold connection
- › 8 inputs on 4 x M12, for double assignment
- › 8 outputs on 4 x M12, for double assignment
- › Standard industry assignment: pin 4 signal 1/pin 2 signal 2
- › System connection SUB D, 25-pin
- › Separate control current circuits of sensors/actuators for safety-relevant functions

Learning objectives

- › for fulfilling operational tasks, for example, mounting and control of drives, automatic systems, interfaces, setup of buffer systems, signal transfer, etc.

No.	Designation	Order No.
1	AC Transfer System	80591
2	3-Phase Asynchronous Motor	57200
3	Shaft cover, closed	57154
4	Connection cable, EMC compliant (shielded), encoded for star connection	55305
5	Connection cable, EMC compliant (shielded), coded for delta circuits	55005



Three-Phase Asynchronous Motor AC



2

- › Star/delta 400/230V AC, 50-60Hz, 0.25 kW
- › Rated speed 1350 rpm
- › Shaft end with coupling
- › Fixed shaft cover
- › RFID identification
- › Mechanical quick-release connectors
- › Inputs/outputs on 4mm or 2mm safety sockets
- › Terminal box with 4-color printed front layout and front layout and switching symbols
- › Winding protection with thermal contact



3

- › as a protection against contact with the open shaft end while experimenting with a single machine or inertia



4

- › 4-pin, shielded
- › EMC compliant
- › approx. 2.5 m
- › encoded for star operation
- › with 4 mm safety plug



5

- › 4-pin, shielded
- › EMC compliant
- › approx. 2.5 m
- › encoded for delta circuits
- › with 4 mm safety plug



DriveCliqu DISPLACEMENT ENCODER for AC Transfer Systems



1

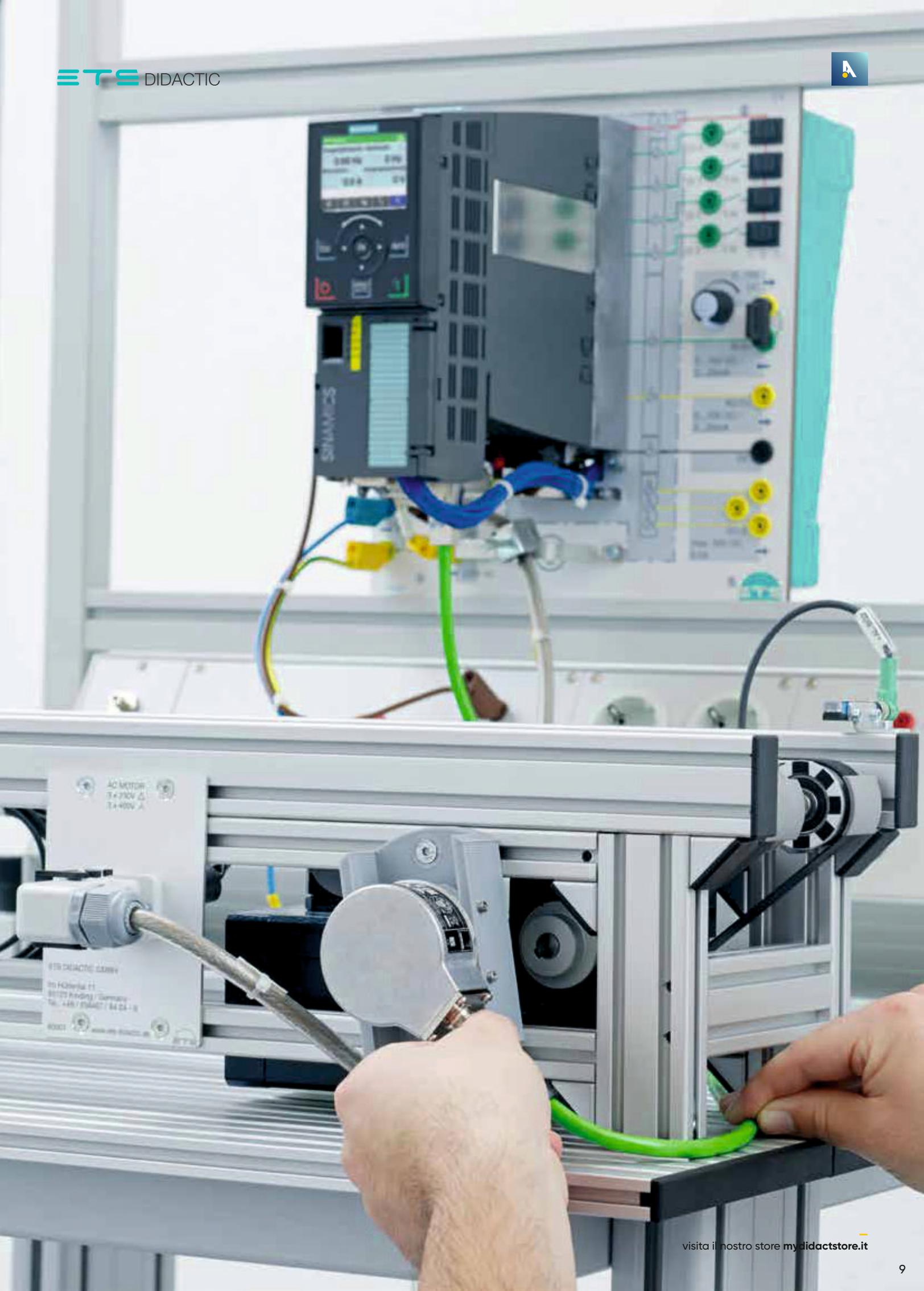
Technical data

- › DriveCliqu encoder (singleturn, resolution 1024)
- › Removable knurled shaft for tapping the belt movement
- › Adapter plate for attachment to the transfer system
- › DriveCliqu cable
- › Fixing material
- › The encoder can be automatically identified by the inverter via DriveCliqu
- › Automatically identifiable by the inverter (G120 is required)

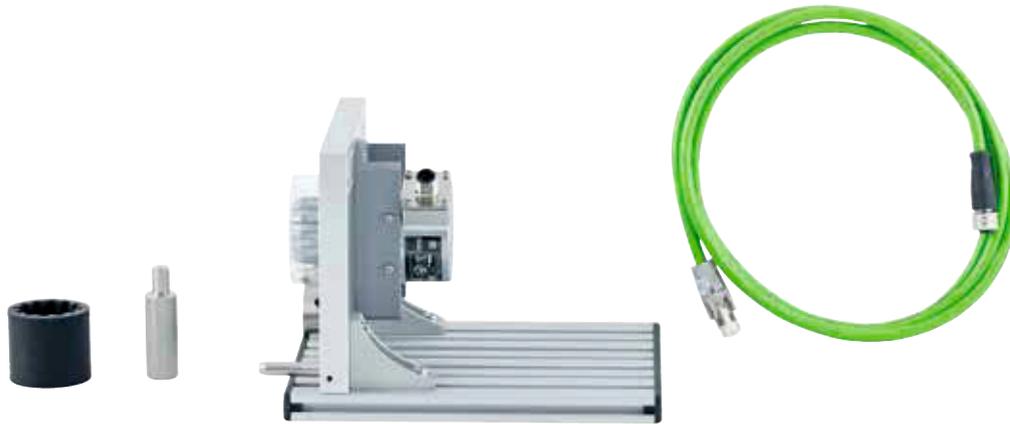
Learning objectives

- › Extension of transfer systems with position detection
- › Parameterization of various encoders
- › Understanding how encoders work

No.	Designation	Order No.
1	DriveCliqu displacement encoder for AC transfer systems	80586



DriveCliqu DISPLACEMENT ENCODER for AC motors



1

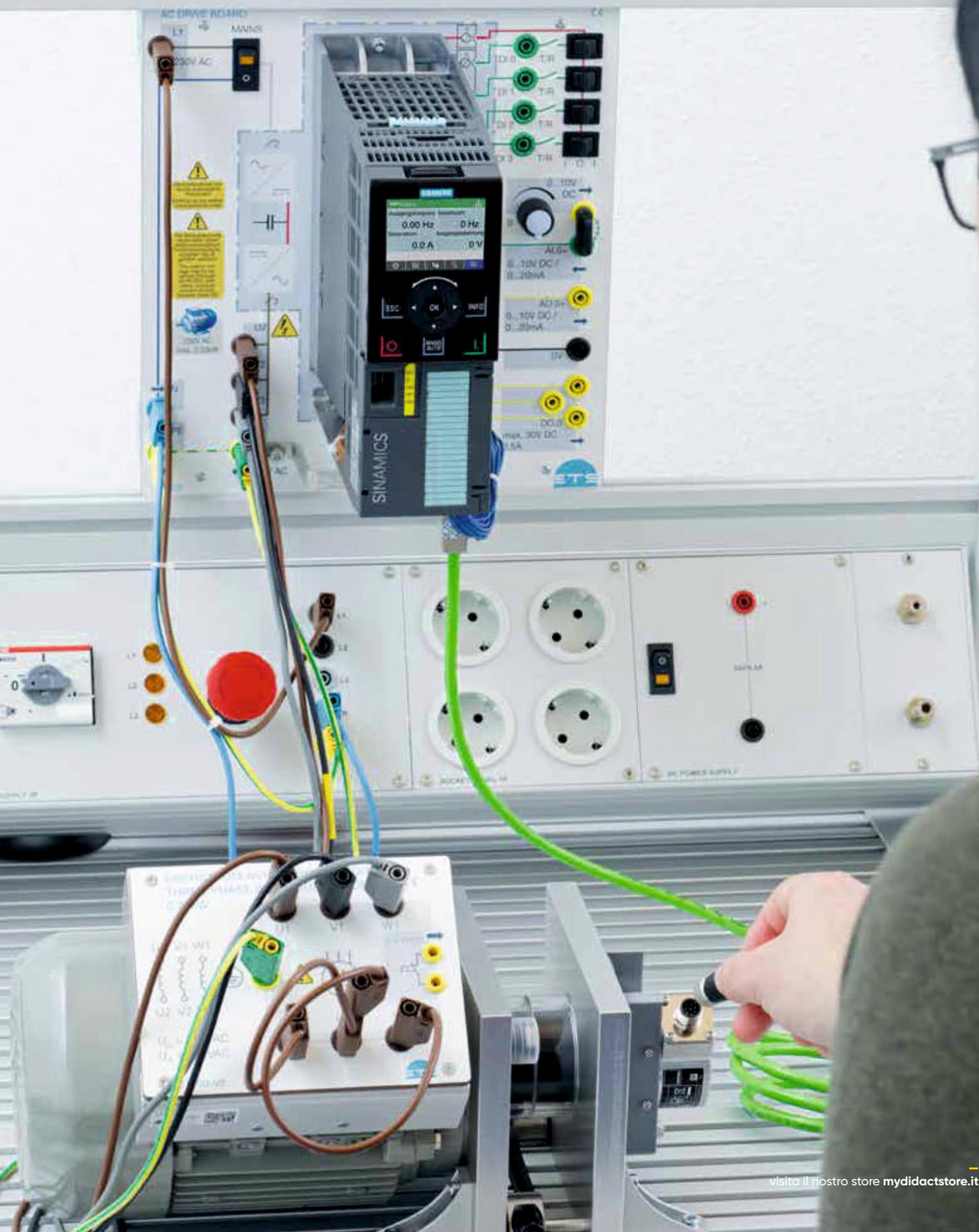
Technical data

- › DriveCliqu displacement encoder for AC transfer systems (80586)
- › Detachable coupling half
- › Coupling sleeve for connecting to AC motors
- › Seat of the displacement encoder mounted on aluminum profile base plate
- › Via DriveCliqu, the encoder can be automatically identified by the inverter

Learning objectives

- › Extension of motors with position detection
- › Parameterization of various encoders
- › Understanding how encoders work

No.	Designation	Order No.
1	DriveCliqu displacement encoder for AC motors	80586-Z01



IO-LINK DISPLACEMENT ENCODER

for Transfer Systems



1

Technical data

- › Encoder (singleturn, resolution 1024-10000, IO-Link, HTL/TTL)
- › Removable knurled shaft for tapping the belt movement
- › Adapter plate for attachment to the transfer system
- › Encoder cable M12-Sub-D 15-pin
- › Sensor cable M12 for connection to IO-Link master
- › Fixing material
- › The encoder communicates with the inverter via HTL/TTL (G120 is required)
- › The encoder communicates with the PLC via IO-Link using a master
- › AC and DC transfer systems can be used

Learning objectives

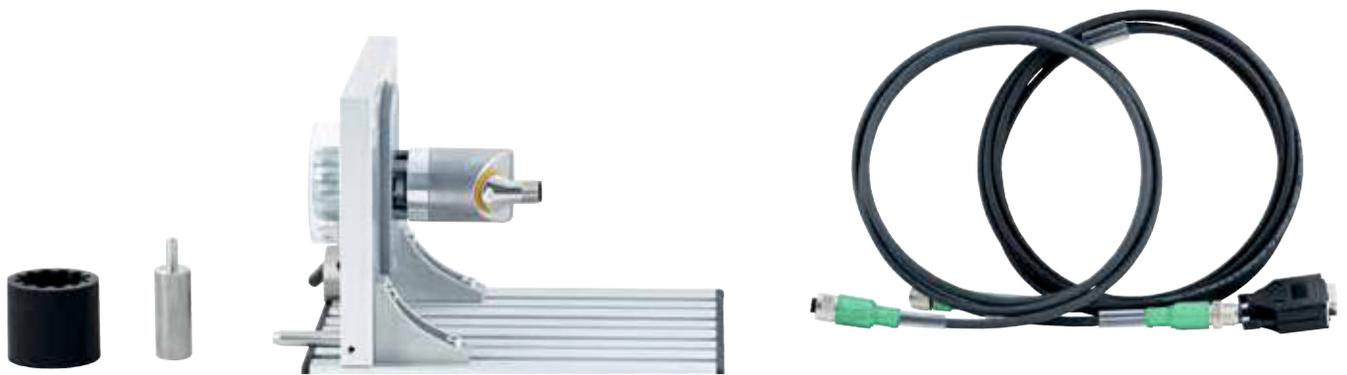
- › Extension of transfer systems with position detection
- › Parameterization of various encoders
- › Understanding how encoders work

No.	Designation	Order No.
1	IO-Link displacement encoder for transfer systems	80587



IO-LINK DISPLACEMENT ENCODER

for AC Motors



1

Technical data

- › Position measuring system IO-Link for transfer systems (80587)
- › Detachable coupling half for connecting with AC motors
- › Coupling sleeve for connecting to AC motors
- › Seat of the displacement encoder mounted on aluminum profile base plate

Learning objectives

- › Extension of motors with position detection
- › Parameterization of various encoders
- › Understanding how encoders work

No.	Designation	Order No.
1	IO-Link displacement encoder for AC motors	80587-Z01



FREQUENCY CONVERTER G120 1-PHASE

Courseware



Printed and digital

1



2



3

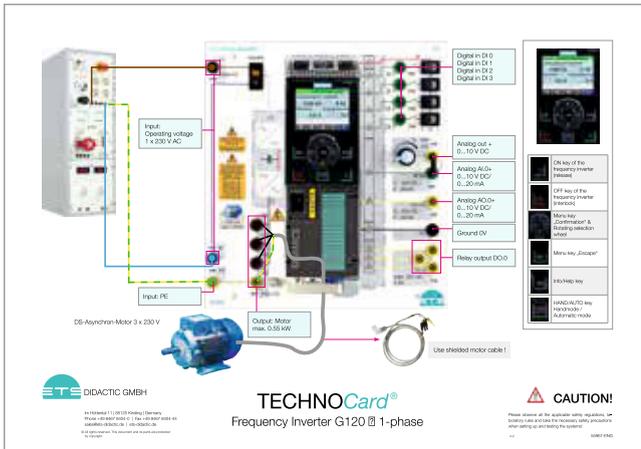


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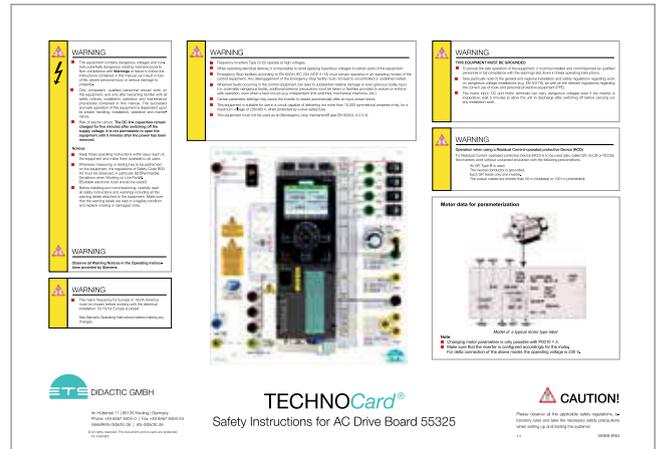
Content

- › Instructions for Using the Frequency Converter SINAMICS G120
- › Description of the Frequency Converter SINAMICS G120
- › Characteristics of SINAMICS G120
- › Intelligent Operator Panel (IOP)
- › Energy-saving fan operation
- › Lift cage control
- › Transfer system control
- › Expansion of the transfer system control (PLC and GSD)
- › Expansion of the transfer system control (technology object)
- › Use of the control panel

TECHNOCards®



5



6

No.	Designation	Order No.
1	Set of ETS ring binders, incl. dividers	91903
2	Instructor's Manual, Frequency Converter G120 1-phase, incl. CD-ROM	55915CD-ENG
3	Manual Frequency Converter G120 1-phase, Practical Experiments, incl. CD-ROM	55916CD-ENG
4	Manual Frequency Converter G120 1-phase, Presentation Aids, incl. CD-ROM	55917CD-ENG
5	TECHNOCard® Frequency Converter G120 1-phase	55967-ENG
6	TECHNOCard® Safety Instructions AC Drive Board 55325	55968-ENG

FREQUENCY CONVERTER G120 3-PHASE

Courseware



Printed and digital



2



3

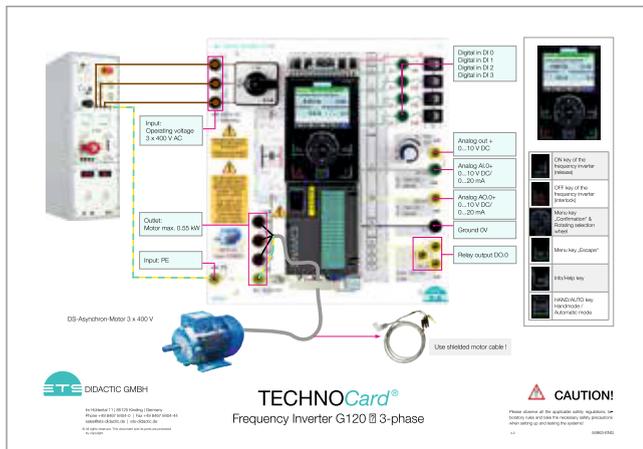


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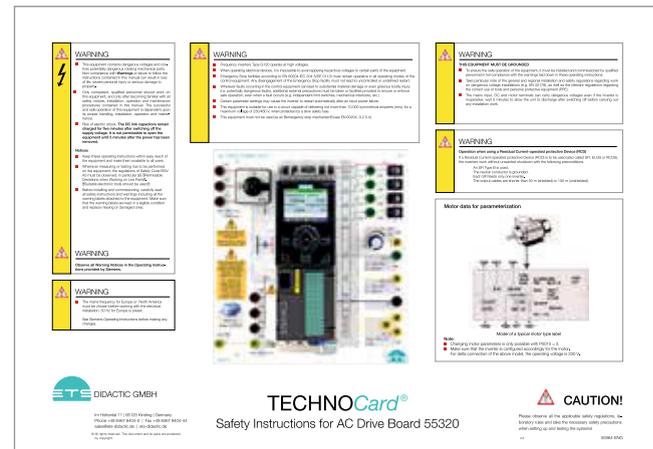
Content

- › Instructions for Using the Frequency Converter SINAMICS G120
- › Description of the Frequency Converter SINAMICS G120
- › General features of SINAMICS G120
- › Modularity
- › Optional components
- › Use of the control panel in the Software STARTER
- › Energy-saving fan operation
- › Lift cage control
- › Transfer system control

TECHNOCards®



5



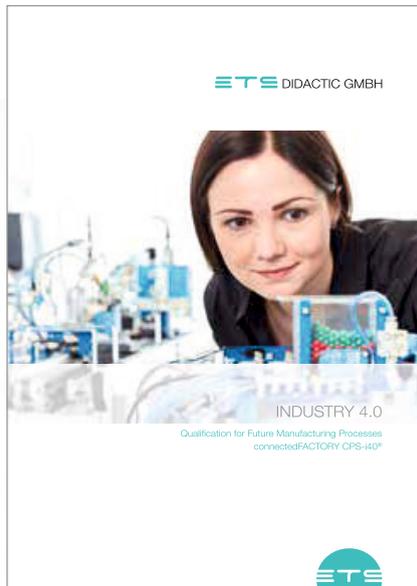
6

No.	Designation	Order No.
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2	Instructor's Manual, Frequency Converter G120 3-phase, incl. CD-ROM	55910CD-ENG
3	Manual Frequency Converter G120 3-phase, Practical Experiments, incl. CD-ROM	55911CD-ENG
4	Manual Frequency Converter G120 3-phase, Presentation Aids, incl. CD-ROM	55912CD-ENG
5	TECHNOCard® Frequency Converter G120 3-phase	55963-ENG
6	TECHNOCard® Safety Instructions AC Drive Board 55320	55964-ENG

DIDACTIC SOLUTIONS FROM ETS

Information on current technical training systems from ETS

Industry 4.0



Electrical Engineering / Electronics / Digital Technology



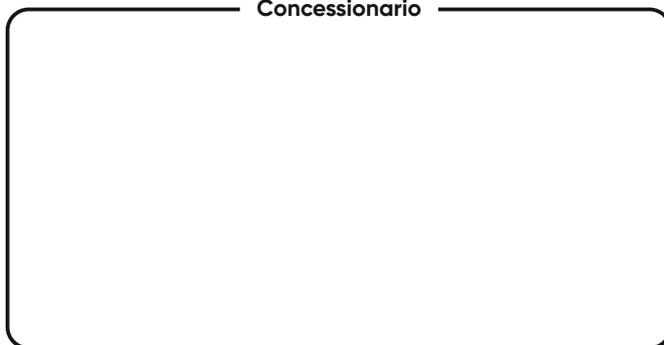


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