INSPIRED BY EFFICIENCY

Operating Manual

Interroll AdControl

UK CA

Manufacturer details

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Content

We strive for the accuracy, timeliness and completeness of the information and have carefully prepared the contents in this document. Regardless of this, errors and changes are expressly reserved.

Online version - only suitable for color printing!

Contents

Contents

1 About this document

1.1 Information about this operating manual

The operating manual is part of the Interroll product(s) named on the title and contains important notes and information on the various operating phases of the product(s) named.

As with all our products, the operating instructions are subject to constant monitoring and will be adapted if necessary.

The current version of these operating instructions can be found on the Internet at www.interroll.com

All information and notes in these operating instructions have been compiled in accordance with the applicable standards and regulations as well as the state of the art.

For special versions, special contractual agreements and technical documents apply in addition to these operating instructions.

- To ensure safe and faultless operation and to fulfil any warranty claims that may apply, read this operating manual first and observe its instructions.
- Keep this operating manual within close reach of the product(s) named.
- Pass this operating manual onto every subsequent owner or user.

The manufacturer assumes no liability for damage and malfunctions that occur as a result of non-compliance with this operating manual.

Should you still have any unanswered questions after reading this operating manual, please contact Interroll customer service. Contact details for your region can be found online at www.interroll.com/contact/

Please direct any comments and suggestions regarding our operating manuals to manuals@interroll.com

1.2 Warning notices in this document

Warning notices are provided in the context in which danger can occur and describe the nature of the danger in question. They are structured according to the following examples:

SIGNAL WORD

Type and source of hazard

Consequence(s) in the event of non-compliance

➢ Measure(s) for avoiding hazard

Signal words indicate the type and severity of the consequences if measures to avoid the hazard are not observed.

DANGER

Denotes an imminent hazard.

If measures to avoid the hazard are not observed, death or severe injury will occur.

➢ Preventive measures

WARNING

Denotes a potentially hazardous situation.

If measures to avoid the hazard are not observed, death or severe injury may occur.

➢ Preventive measures

CAUTION

Denotes the possibility of a hazardous situation.

If measures to avoid the hazard are not observed, minor or moderate injury may occur.

➢ Preventive measures

NOTE

Denotes a situation that can lead to material damage.

➢ Preventive measures

1.3 Symbols

This symbol indicates useful and important information.

✓ This symbol indicates a requirement that must be fulfilled before carrying out assembly or repair work.

This symbol indicates general information relating to safety.

➢ This symbol indicates an action that needs to be performed.

• This symbol indicates a listed item.

2 Safety-related information

2.1 State of the art

The Interroll AdControl has been constructed with respect to applicable standards and the current state of the art and has been delivered in a condition that is safe to operate. Nevertheless, hazards can occur as a result of use.

Non-compliance with the instructions in this operating manual can result in life-threatening injuries.

In addition, the applicable local accident prevention regulations for the area of application and general safety regulations must be adhered to.

2.2 Proper use

The AdControl may only be used in an industrial environment for industrial purposes within the stipulated performance limits that are given in the technical specifications.

The AdControl may only be used in an industrial environment for industrial purposes within the defined performance limits specified in the technical data.

The AdControl can be used if a RollerDrive EC300 (predecessor of the EC310) is to be replaced by a RollerDrive EC310. The AdControl has a short connection cable with plug. The plug corresponds to that of the EC300 and is connected to the existing DriveControl EC200/EC300 or extension cable.

By using AdControl a RollerDrive EC310 can be used without changing the existing wiring.

Depending on the gear ratio, the AdControl can also be used when replacing an EC200 with an EC310.

2.3 Improper use

Any use that goes beyond the proper use is considered improper, unless this has been authorised by Interroll Engineering GmbH where applicable.

The equipment must not be installed in areas in which substances could form explosive atmospheres/dust atmospheres or for application in the medical/pharmaceutical sector.

It is considered improper use to install the equipment in exposed spaces that are open to potentially adverse weather conditions, or areas in which the technology would suffer from the prevailing climactic conditions and could potentially malfunction as a result.

The AdControl is not intended for use by private end users. The equipment must not be used in a residential environment without further examination and without the use of EMC protective measures that have been adapted accordingly.

It must not be used as a safety-relevant component or for performing safety-relevant functions.

2.4 Qualification of personnel

Non-qualified personnel are unable to identify risks and are therefore exposed to higher levels of danger.

- ➢ Only qualified personnel may be assigned with the tasks outlined in this operating manual.
- ➢ The operating company is responsible for ensuring that personal adhere to the locally valid rules and regulations for working in a safe and risk-aware manner.

This operating manual is intended for the following target audiences:

Operators

Operators are trained in how to operate and clean the Interroll AdControl unit and follow the safety regulations.

Service engineers

The service engineers have a specialist technical education or have successfully completed a training course from the manufacturer. They carry out repair and maintenance work.

Qualified electricians

Qualified electricians have a specialist technical education. Moreover, due to their knowledge and experience as well as knowledge of applicable regulations, they are able to carry out work on electrical equipment in an appropriate manner. They are able to identify hazards independently and prevent electrical damage to persons and property.

All work on electrical equipment must generally only be performed by a qualified electrician.

2.5 Dangers

Here, you will find information about the different types of dangers or damage that can occur in connection with the operation of the AdControl.

Injury to persons

- Maintenance, installation and repair work on the unit must only be carried out by authorised technical personnel in compliance with the applicable provisions.
- Before switching on the AdControl, ensure that no unauthorised personnel are situated in the vicinity of the conveyor/conveying system.

Electricity

- Installation and repair work must only be carried out when the system has been disconnected from the power supply. Switch off the power to the AdControl and ensure that it cannot be unintentionally switched on again.

Work environment

- Remove any materials and objects that are not required from the working area.

Faults in operation

- Regularly check the AdControl for visible damage.
- If smoke develops, immediately switch off the power to the AdControl and ensure that it cannot be unintentionally switched on again.
- Immediately contact specialist personnel to determine the cause of the malfunction.

Maintenance

- Since the product in question requires no maintenance, it is sufficient to simply examine the AdControl for visible damage on a regular basis.
- Never open up the AdControl.

Unintentional start-up

- Ensure that the connected RollerDrive/motors cannot start up unintentionally, particularly during assembly and maintenance work or in the event of a fault.

2.6 Interface to other devices

The integration of the AdControl into a conveyor system can create additional potential hazards. Such potential hazards are not covered by this operating manual and must be analysed during the development, installation and commissioning of the conveyor system as a whole.

➢ Following the integration of the AdControl into a conveyor system, the entire system must be checked for any new potential hazards that may be present before the conveyor is switched on.

2.7 Operating modes/operating phases

Standard operation

Operation in the installed condition at the end customer as a component in a conveyor in an overall system.

Special operation

Special operation encompasses all operating modes/operating phases that are necessary to guarantee and maintain safe standard operation.

Special operating mode	Comments
Transport/storage	-
Assembly/commissioning	In de-energised state
Cleaning	In de-energised state
Maintenance/repair	In de-energised state
Fault location	In de-energised state
Troubleshooting	In de-energised state
Decommissioning	In de-energised state
Disposal	-

2.8 Applicable documentation

In order to ensure proper use of the RollerDrive, additional operating manuals/documentation relating to the following must be consulted:

- Power supply unit
- RollerDrive
- Description of the conveyor system/unit

Also ensure that you adhere to the information given in the operating manuals of the connected devices.

Product-specific data can be read out via the Interroll Product App and the QR code on the nameplate. The Interroll Product App is available in all well-known app stores:

GET IT ON Google Play

INTERROLL

Download on the App Store

3 Product information

3.1 Product description

The AdControl serves as an interface modification between a DriveControl 200/ DriveControl 300 and a RollerDrive EC310. If the RollerDrive EC300 of a conveyor is replaced with a RollerDrive EC310, but the DriveControl 200/300 is to remain, the AdControl ensures that the signals (speed and direction of rotation) of a DriveControl 200/300 are converted in such a way that a RollerDrive EC310 can be connected that behaves in exactly the same way as a RollerDrive EC300. The AdControl can also be used if the RollerDrive EC300 has been actuated without DriveControl.

Functions

Regenerative breaking

When the RollerDrive motor brakes, it acts as a generator and feeds energy back into the power supply. The AdControl has a built in brake chopper (load resistor) to limit the DC voltage on the connection to a stable level.

Diagnostics

LEDs indicate the operating condition of the AdControl and the RollerDrive as well as the operating voltage (see „Meaning of the LED", page 20). An error signal can also be output.

Speed conversion

Because the RollerDrive EC310 has other gear phases just like the RollerDrive EC300, the RollerDrive EC310 would rotate at a different speed when actuated in the same way. The AdControl converts the speed signal of the DriveControl 200/300 in such a way that the RollerDrive EC310 rotates at the same speed as a previously used RollerDrive EC300.

Energy feedback

When the speed of a rotating RollerDrive is abruptly reduced (e. g. by removing or reducing the start signal at the DriveControl), the RollerDrive continues to rotate briefly (depending on the weight of the conveyed goods being stopped) and thus functions as a generator. The voltage generated in this way increases the supply voltage of the RollerDrive. This increased voltage is partly fed to the DC supply (to max. 30 V) and partly converted to heat via a brake chopper resistance on the DriveControl. The regenerated power is then available for other consumers. The more precisely 24 V are complied to in the voltage supply the greater the voltage range in which the DC network can be fed back to.

Temperature protection

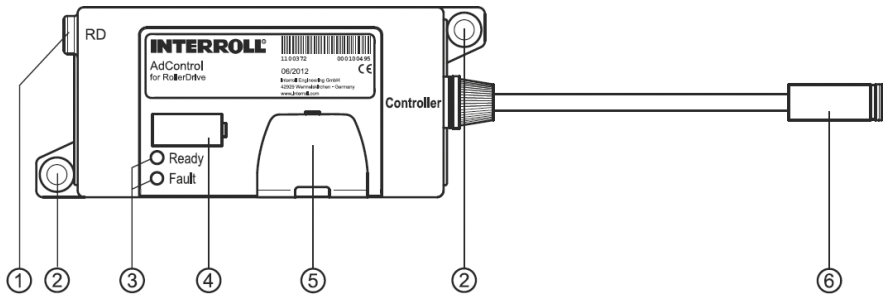
The brake chopper resistor is temperature-controlled. If, due to specific application properties (e. g. high conveying weight or high conveying speed), the brake chopper resistance is frequently switched, the DriveControl switches off when it becomes too hot (approx. 90 °C inner temperature). If temperature protection is activated, this state is indicated by the LEDs and no start signal will be transmitted to the RollerDrive. When the DriveControl has cooled down, the RollerDrive restarts automatically when a signal is pending. The DriveControl cools down quicker if it is mounted on a flat surface, ideally metal.

NOTE

DriveControl failure from overheating

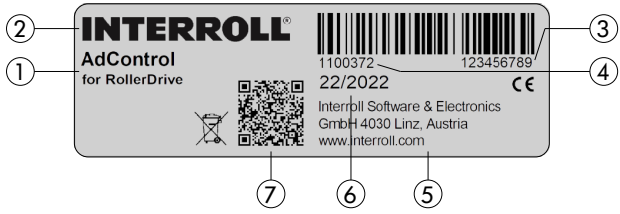
➢ Do not perform a voltage reset when temperature protection is active.

3.2 Components



1 RollerDrive connector
2 Mounting link with hole for countersunk screw
3 LED Ready und Fault
4 Marker (changeable)
5 Cover for DIP switches
6 Controller connection

3.3 Typenschild

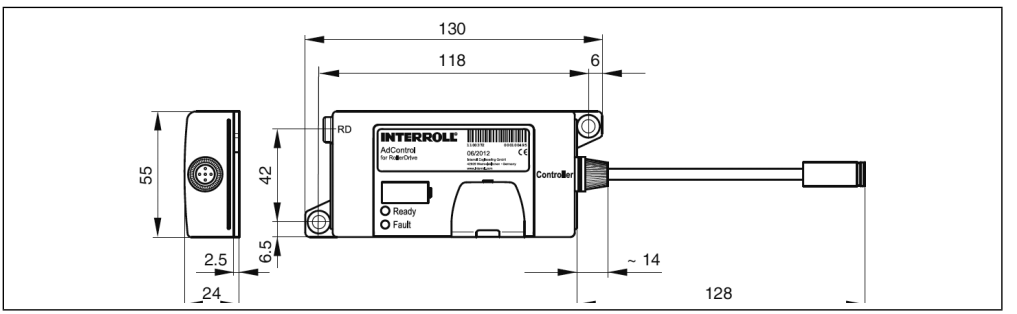


1 Product name
2 Manufacturer
3 Serial number
4 Article number
5 Manufacturer's address
6 Week and year of production
7 QR Code

3.4 Technical data

Rated voltage	24 V DC, protected extra-low voltage (PELV)
Voltage range	19 bis 26 V DC (max. reverse polarity protection 30 V)
Current consumption	with RollerDrive: up to 5 A without RollerDrive: 0,5 A
Protection classification	IP 20
Cooling	Convection
Ambient temperature in operation	0 °C to +40 °C (32 °F to 104 °F)
Ambient temperature during transport and storage	-40 °C to +85 °C (-40 °F to 185 °F)
Air humidity	5 to 95 %, condensation not permissible
condensation not permissible	Max. 1000 m (max. 3300 ft)

3.5 Dimensions



3.6 DIP-Schalter

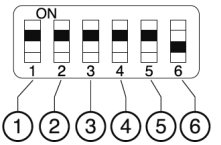
The DIP switches are used to select the gear ratio of the previously used RollerDrive EC300 and RollerDrive EC310 to be used in the future. Based on these values, the AdControl determines the necessary change that has to be made to the speed signal.

In its as-delivered state, the gear ratio EC300 13:1 and EC310 16:1 are set.

DIP switches	Meaning
7,85:1 / 13:1	Gear ratio of the RollerDrive EC300
Bit 0, Bit 1, Bit 2, Bit 3	Gear ratio of the RollerDrive EC310 (see below)
Reserve	Not occupied

Gear ratio RollerDrive EC310	DIP switches			
	Bit 3	Bit 2	Bit 1	Bit 0
9:1	OFF	OFF	OFF	OFF
12:1	OFF	OFF	OFF	ON
16:1	OFF	OFF	ON	OFF
20:1	OFF	OFF	ON	ON
24:1	OFF	ON	OFF	OFF
36:1	OFF	ON	OFF	ON
48:1	OFF	ON	ON	OFF
64:1	OFF	ON	ON	ON
96:1	ON	OFF	OFF	OFF

If a different DIP switch combination is set than the one listed in the table, the RollerDrive speed of rotation will be set to 0 RPM.



DIP switches	
1 Bit 3	4 Bit 0
2 Bit 2	5 7,85:1 / 13:1
3 Bit 1	6 Reserve

3.7 Meaning of the LED

The LEDs indicate the operating state of the AdControl and the RollerDrive and provide information about the operating voltage.

LED green	Meaning	Operating voltage
On steady	AdControl ready for operation	19 to 26 V
Flashing	RollerDrive rotating/is activated	19 to 26 V
Off	AdControl not ready for operation	

LED green	Meaning	Operating voltage
On steady	fuse in AdControl defective	
Flashing slowly [1]	• Operating voltage too low or too high • RollerDrive Error • RollerDrive faulty or not connected	unter 18 V oder über 26 V
Flashing quickly [2]	Abschaltung wegen erhöhter Temperatur im Chopperwiderstand	

[1] LED flashing slowly = 0,5 s on - 1,5 s off

[2] LED flashing quickly = 0,5 s on - 0,5 s off

3.8 Comparison RollerDrive EC310 and EC300

Replacing a RollerDrive EC300 with a RollerDrive EC310 changes the torque and maximum speed.

Gear ratio		DIP switches					Nominal torque [Nm]		Max. torque [Nm]		Max. speed [m/s]	
EC300	EC310	Bit 3	Bit 2	Bit 1	Bit 0	7,85:1 / 13:1	EC300	EC310	EC300	EC310	EC300	EC310
13:1	12:1	OFF	OFF	OFF	ON	ON	0,90	0,61	1,60	1,46	1,27	1,31
13:1	16:1	OFF	OFF	ON	OFF	ON	0,90	0,81	1,60	1,95	1,27	0,98
13:1	20:1	OFF	OFF	ON	ON	ON	0,90	1,01	1,60	2,44	1,27	0,78
7,85:1	9:1	OFF	OFF	OFF	OFF	OFF	0,70	0,45	1,00	1,10	2,00	1,75
7,85:1	12:1	OFF	OFF	OFF	ON	OFF	0,70	0,61	1,00	1,46	2,00	1,31
7,85:1	16:1	OFF	OFF	ON	OFF	OFF	0,70	0,81	1,00	1,95	2,00	0,98

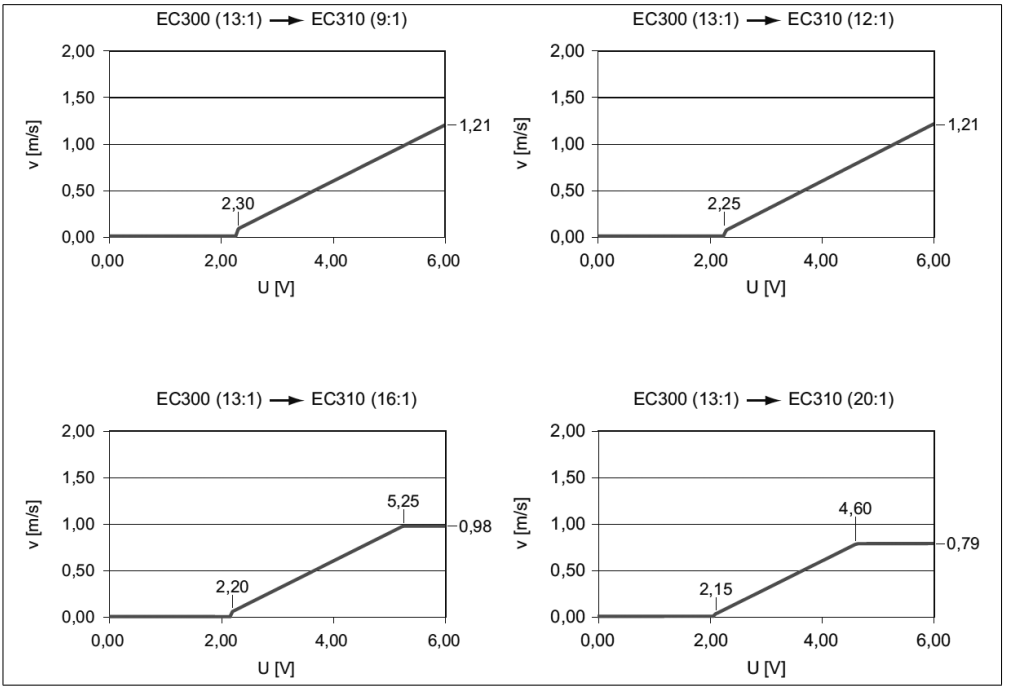
Product information

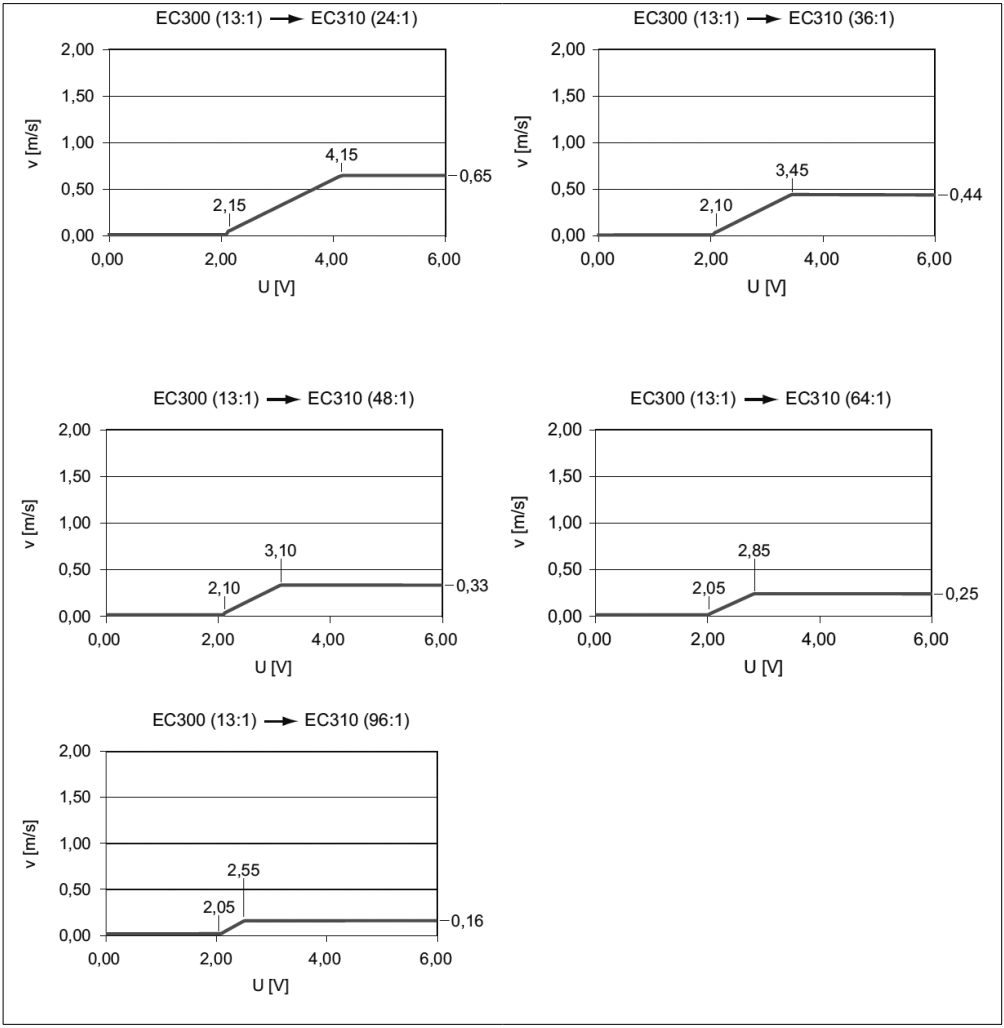
The following graphs show the conveyor speed as a function of the voltage and of the gear stages.

Abbreviations:

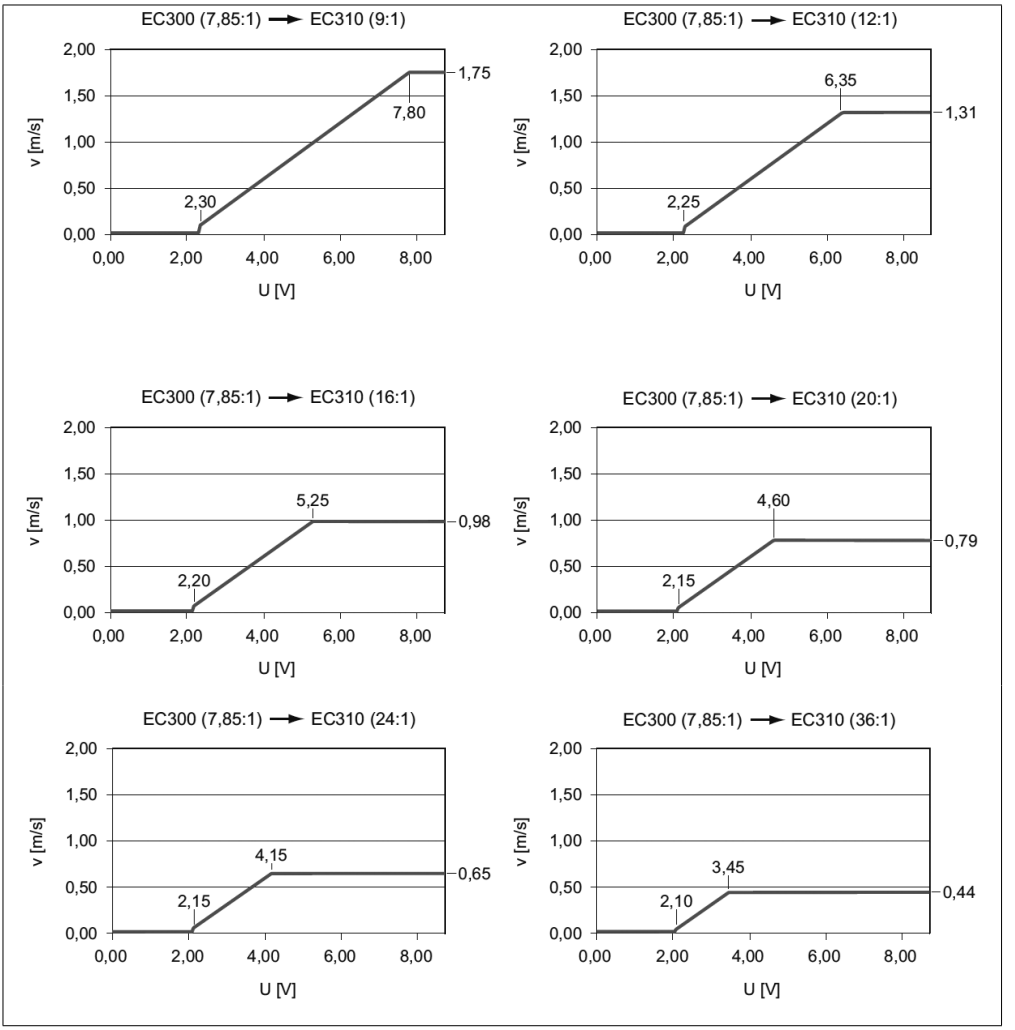
- v [m/s] Conveyor speed in m/s
- U [V] Speed control in volts

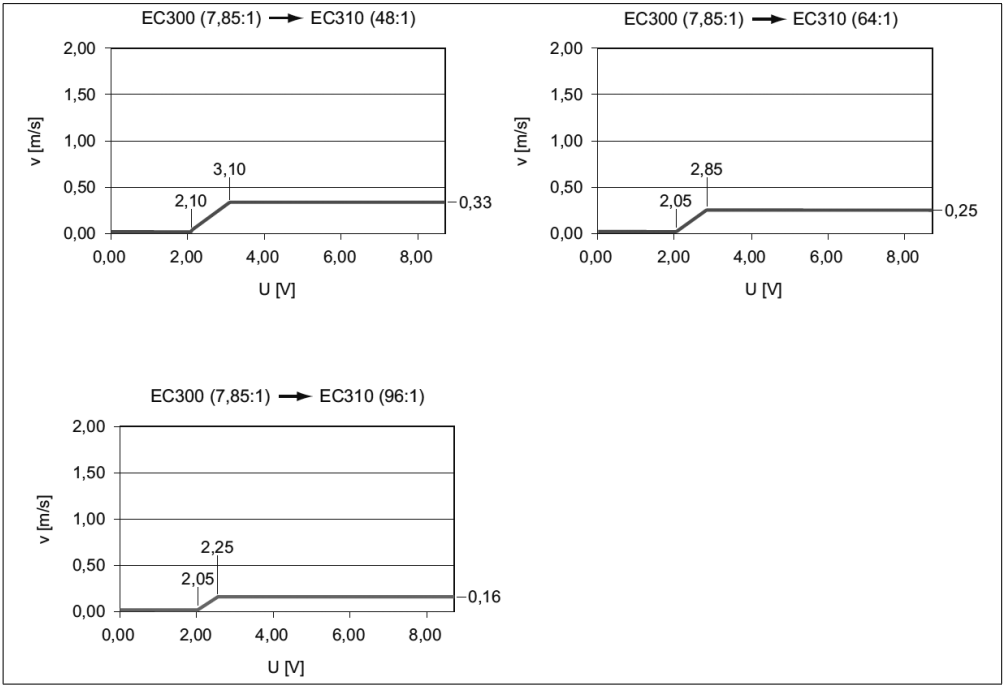
EC300 13:1




EC300 (13:1) → EC310 (24:1)
v [m/s]
2,00
1,50
1,00
0,50
0,00
4,15
2,15
0,65
0,00
2,00
4,00
6,00
U [V]
EC300 (13:1) → EC310 (36:1)
v [m/s]
3,45
2,10
0,44
U [V]
EC300 (13:1) → EC310 (48:1)
v [m/s]
3,10
2,10
0,33
U [V]
EC300 (13:1) → EC310 (64:1)
v [m/s]
2,85
2,05
0,25
U [V]
EC300 (13:1) → EC310 (96:1)
v [m/s]
2,55
2,05
0,16
U [V]

EC300 7,85:1


EC300 (7,85:1) → EC310 (9:1)
v [m/s]
U [V]
2,30
7,80
1,75
EC300 (7,85:1) → EC310 (12:1)
2,25
6,35
1,31
EC300 (7,85:1) → EC310 (16:1)
2,20
5,25
0,98
EC300 (7,85:1) → EC310 (20:1)
2,15
4,60
0,79
EC300 (7,85:1) → EC310 (24:1)
2,15
4,15
0,65
EC300 (7,85:1) → EC310 (36:1)
2,10
3,45
0,44


EC300 (7,85:1) → EC310 (48:1)
v [m/s]
2,00
1,50
1,00
0,50
0,00
3,10
2,10
0,33
0,00
2,00
4,00
6,00
8,00
U [V]
EC300 (7,85:1) → EC310 (64:1)
v [m/s]
2,00
1,50
1,00
0,50
0,00
2,85
2,05
0,25
0,00
2,00
4,00
6,00
8,00
U [V]
EC300 (7,85:1) → EC310 (96:1)
v [m/s]
2,00
1,50
1,00
0,50
0,00
2,25
2,05
0,16
0,00
2,00
4,00
6,00
8,00
U [V]

4 Transport and storage

4.1 Transport

Every AdControl is packaged in its own cardboard box.

Caution

There is a risk of injury if transported incorrectly!

- ➢ Only qualified and authorized persons should transport the product.

Please note the following:

- ➢ Do not stack more than four cardboard boxes on top of each other.
- ➢ Prior to transport, check whether the AdControl is correctly attached.
- ➢ Avoid heavy impacts during transport.
- ➢ Check each AdControl after transport for any visible damage.
- ➢ If any damage has been identified, photograph the damaged parts.
- ➢ In the event that damage has been incurred during transport, inform the shipping agent or Interroll immediately to ensure that you do not lose any potential damage claims.
- ➢ Do not expose the AdControl to any strong fluctuations in temperature, since this can lead to condensation forming.

4.2 Storage

CAUTION

Risk of injury due to improper storage.

- ➢ Ensure that the AdControl is stored safely.

Please note the following:

- ➢ Do not stack pallets on top of one another.
- ➢ Check each AdControl after storage for any visible damage.

5 Assembly and installation

5.1 Warning notices for installation

NOTE

An improper approach to installing the AdControl can lead to material damage or reduce the service life of the AdControl.

- ➢ To preserve the interior of the AdControl, do not allow the AdControl to fall or for it to be used in an improper fashion.
- ➢ Check each AdControl before assembly for any visible damage.
- ➢ Ensure that the AdControl is not tensioned during the assembly process (no bending or torsional load).
- ➢ Do not drill any additional mount holes into the housing and do not enlarge any existing holes.
- ➢ Ensure that the permitted operating temperature is under no circumstances exceeded as a result of external heat sources.

5.2 Assembling the AdControl

- ➢ Look for level surfaces that are suitable for mounting the AdControl on.
- ➢ Use the AdControl as a template and mark the middle of the two installation holes. For the distance between the installation holes, see „Dimensions“ on page 18.
- ➢ Drill two installation holes with diameters of 5.6–6 mm on the markings.
- ➢ Screw on the AdControl.
- ➢ Make sure the housing has not been distorted.

5.3 Warning notices for electrical installation

Caution

Risk of injury when working on electrical equipment!

- Electrical work should only be performed by qualified and authorised persons.
- Before installing, removing or connecting the AdControl, switch off the power to the conveyor system and ensure that it cannot be unintentionally switched on again.
- Set all the power supplies used to the same ground potential in order to avoid compensating currents via the AdControl.
- Ensure all components are earthed correctly. Improper earthing can lead to a build-up of static charge, which can result in a fault or premature failure of the AdControl.
- Ensure that suitable switching devices and protective systems are in place that will allow the equipment to be operated safely.
- Only switch on the operating voltages when all cables are connected.

NOTE

Improper electrical installation can result in damage to the AdControl.

- Observe national regulations for electrical installation.
- Only operate the AdControl with a protective extra-low voltage (PELV) of 24 V or 48 V.
- Never operate the AdControl with an alternating voltage.
- Ensure that the polarity of the power supply is correct.
- Ensure that the existing electrical installation has no disruptive influence on the AdControl.
- Only use cables that are adequately dimensioned for the specific operating conditions.
- Ensure that the calculations for the drop in voltage in the cables are taken into account.
- Observe regulations for laying cables.
- Do not expose the connectors to excessively high tensile or pressure loads. If the connector cable is bent, this can damage the cable insulation and cause the AdControl to fail.

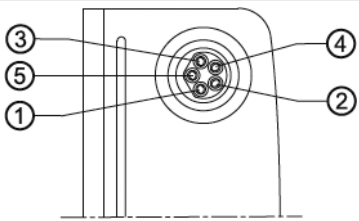
5.4 Electrical installation

Connect the control plug with the DriveControl or alternative controller.

If necessary, set the DIP switches according to requirements (see „DIP switches", page 19).

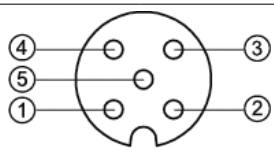
Insert the plug of the RollerDrive so that with the the „RD" labeling can be read and the „EC310" labeling is to the rear, i.e. cannot be read.

5.5 Eingänge und Ausgänge



RollerDrive connection: 8 mm snap-in, 5-pin, pin location in accordance with DIN EN 61076-2

1 +24 V DC	4 Input error signal
2 Output for direction of rotation	5 Output speed signal
3 Ground	



Controller connection

1 +24 V DC	4 Output error signal
2 Input for direction of rotation	5 Input speed signal
3 Ground	

The electrical data for each connection is specified in the appendix (see „Electrical data of connectors", page 35).

6 Initial startup and operation

6.1 Commissioning

Pre-commissioning checks

- ➢ Ensure that the AdControl has been correctly fastened to the profile and that all screws have been correctly tightened.
- ➢ Ensure that there are no additional areas of danger caused by interfaces to other components.
- ➢ Ensure that the wiring is in accordance with the specification and legal directives.
- ➢ Check all protection devices.
- ➢ Ensure that no personnel stand in hazardous areas near the conveyor.

Inspection before each commissioning

- ➢ Check the AdControl for visible damage.
- ➢ Check the DIP switch settings (see „DIP switches", page 21).
- ➢ Check all protection devices.
- ➢ Clearly specify and monitor the way goods are placed on the conveyor.
- ➢ Ensure that the RollerDrive is not blocked.
- ➢ Ensure that no personnel stand in hazardous areas near the conveyor.

6.2 Operation

Caution

Accidental start-up of the RollerDrive!

Danger of crushing of limbs and damage to goods!

- ➢ Ensure that no unauthorised persons are near the conveyor before switching on the operating voltage.

Ambient conditions during operation see „Technical data", page 18.

The AdControl starts transmitting the signals as soon as the voltage is switched on.

7 Maintenance and cleaning

CAUTION

Risk of injury from following incorrect procedure.

- ➢ Maintenance and repair work must only be carried out by authorised and trained (specialist) personnel.
- ➢ Maintenance and repair work must only be carried out when the system has been disconnected from the power supply. Switch off the power to the AdControl and ensure that it cannot be unintentionally switched on again.
- ➢ Put up signs to indicate that maintenance or cleaning work is being carried out.

7.1 Maintenance

Checking the AdControl

The AdControl itself requires no maintenance. However, in order to prevent faults from occurring, the connections and fixings must be examined on a regular basis.

- ➢ In the course of regular inspection and maintenance work on the conveyor, ensure that the screws of the AdControl are still tight, that the cables are still arranged correctly and that the corresponding connections are correctly attached.

Replacing the AdControl

If a AdControl is damaged or defective, it must be replaced.

Do not attempt to open the AdControl.

- ➢ Install a new AdControl (see „Decommissioning", page 34 and see „Assembling the AdControl", page 27).

7.2 Cleaning

Under humid conditions, dust and dirt can cause a short circuit. Therefore, ensure dirty environments are cleaned regularly to prevent short circuits that could damage the AdControl.

NOTE

The AdControl can be damaged if it is cleaned improperly.

- ➢ Never immerse the AdControl in fluids.

- ➢ If necessary, vacuum any dust or dust that is present.
- ➢ To clean the AdControl more thoroughly, disconnect it from the power supply, detach it and wipe it with a damp cloth.

8 Troubleshooting

8.1 Troubleshooting

Symptom	Possible Cause	Help
AdControl is not working or is working incorrectly	No power supply	➢ Check whether the output voltage of the power supply is within the specified voltage range. ➢ Check the connections and correct if necessary.
RollerDrive is rotating at the wrong speed	Wrong position of the DIP switches	➢ Check and if necessary correct the position of the DIP switches (see „DIP switches", page 19).
AdControl faulty or damaged		➢ Replace the AdControl.
Maximum speed not reached	Improper gear reduction of the RollerDrive EC310	➢ Use the RollerDrive EC310 with the appropriate gear reduction.

The error signal is active in the event of the following faults:

- RollerDrive error
- RollerDrive not connected properly
- Upper and lower levels of permitted operating voltage transgressed
- Operating voltage has reverse polarity
- Chopper resistor overheating

9 Decommissioning and disposal

CAUTION

Risk of injury from following incorrect procedure.

- ➢ Decommissioning must only be carried out by authorised, qualified personnel.
- ➢ Only decommission the AdControl when the system has been disconnected from the power supply.
- ➢ Switch off the power to the AdControl and ensure that it cannot be unintentionally switched on again.

9.1 Decommissioning

- ➢ Remove all cables from the AdControl.
- ➢ Loosen the screws that have been used to attach the AdControl to the conveyor frame.
- ➢ Remove the AdControl from the conveyor frame.

9.2 Disposal

In principle, the operator is responsible for the professional and environmentally friendly disposal of the products.

The implementation of the WEEE Directive 2012/19/EU in national laws must be observed.

Alternatively, Interroll offers to take back the products.

Contact:

atse.customerservice@interroll.com

10 Appendix

10.1 Replacing a RollerDrive EC200

The RollerDrive EC310 can also replace a RollerDrive EC200. In such a case, speed variations may occur. To approximately achieve the desired speeds, different DIP switch settings are required than those used for the replacement of the RollerDrive EC300.

Gear ratio		DIP switches					Nominal torque [Nm]		Max. torque [Nm]		Max. speed [m/s]		Speed differenz
EC200	EC310	Bit 3	Bit 2	Bit 1	Bit 0	7,85:1 / 13:1	EC200	EC310	EC200	EC310	EC200	EC310	
12:1	16:1	OFF	OFF	ON	OFF	ON	0,70	0,81	1,20	1,95	0,98	0,92	-7 %
16:1	20:1	OFF	OFF	ON	OFF	ON	0,90	1,01	1,80	2,44	0,74	0,73	-1 %
36:1	48:1	OFF	OFF	ON	OFF	ON	1,70	2,42	3,60	5,85	0,33	0,31	-7 %
36:1E	20:1	OFF	OFF	OFF	OFF	OFF	1,30	1,01	2,60	2,44	0,44	0,40	-8 %
48:1	64:1	OFF	OFF	ON	OFF	ON	2,30	3,23	5,40	7,80	0,25	0,23	-7 %
64:1	96:1	OFF	OFF	ON	OFF	ON	3,60	4,84	8,00	11,69	0,18	0,15	-17 %

10.2 Electrical data of connectors

RollerDrive connector

Power supply (Pin 1, 3)

Nominal value	24 V DC	
Voltage range	18 to 26 V DC	
Residual ripple	max. 600 mV_{PP}	
Rated current	0 to 2,3 A	
Peak current	max. 5 A	max. 250 ms > 2.3 A, time-dependent current flow triangular, duty factor ≤ 19 %
Return electric strength	max. 35 V DC	absence of harmonic waves max. 500 ms; after 500 ms the reserve voltage must be 27 V, duty factor max. 27 %

Appendix

Direction of rotation output (Pin 2)

Properties	not electrically isolated, short circuit-proof, infeed of external voltage not permitted	
Overvoltage protection	max. 30 V DC	
Clockwise direction of rotation	max. 4 V	logical 0
Output current low	max. 1 mA	Load resistance = 57 kΩ
Anticlockwise direction of rotation	min. 7 V	logical 1
Output current high	max. 0,2 mA	with short circuit

Input error (Pin 4)

Properties	Not galvanically separated	
Reverse polarity protection	Max. 30 V DC	
Max. voltage	30 V DC	
Logic level, low	Max. 8.5 V DC	at 1.5 mA Logic level 0 = L = no error
Residual current, low	1.5 mA Max. 5 mA	
Logic level, high	12 to 30 V DC	Logic level 1 = H = error
Residual current, high	Max. 0.01 mA	

Speed output (Pin 5)

Properties	Not galvanically separated	
Speed setting range for motor control voltage	2.3 to 10 V DC	RollerDrive rotates
Stop range	0 to 2 V DC	RollerDrive does not rotate
Accuracy of motor control voltage	5%	Motor control voltage between 2.3 and 10 V DC at 21 °C
Ripple of motor control voltage	250 mV_{PP}	50 Ω
Max. load for motor control current	0.16 to 2 mA	Input resistance for RollerDrive: 66 kΩ
Rate of change	4.5 to 5 V/ms	0–100% motor control voltage

Controller Connection

Cable 100 mm long with 5-pole M12 connector, matching socket of the Interroll DriveControl 200/300.

Power supply (Pin 1, 3)

Rated voltage	24 V DC	
Voltage range	19 bis 26 V DC	
Remaining ripple	max. 200 mV_{PP}	
Overvoltage resistance	max. 35 V DC	Without harmonic waves max. 500 ms
Rated current consumption, without motor	0,5 A	at 24 V
Rated current consumption, with motor	3 A	at 24 V
Max. current consumption, with motor	5 A	at 24 V max. 500 ms

Direction of rotation input (Pin 2)

Properties	not galvanically separated	
Reverse polarity protection	yes	max. -30 V DC
Maximum voltage	30 V DC	
Logic level low	max. 0,8 V DC	Anticlockwise direction of rotation
Logic level high	min. 2,4 V DC	Clockwise direction of rotation
Input resistance	5,6 kΩ	

Error output (Pin 4)

Properties	not galvanically separated, open collector	
Max. voltage	30 V DC	
Series resistance	5,6 kΩ	external load resistance required in accordance with VCC
Max. collector current	5 mA	
Max. output voltage	8,9 V DC	@ I_C = 1,5 mA
Logic	Transistor conducting = OK Transistor not conducting = Error	

Appendix

Eingang Geschwindigkeit (Pin 5)

Properties	not galvanically separated	
Reverse ppolarity protection	yes	max -30 V DC
Max. voltage	30 V DC	for max. 5s
Total control range	0 to 10 V DC	
Control range conveying operation EC300 7,85:1	2,0 to 8,6 V DC	2,0 V = 0,0 m/s 8,6 V = 2,0 m/s
Control range conveying operation EC300 13:1	2,0 to 6,0 V DC	2,0 V = 0,0 m/s 6,0 V = 1,21 m/s
Stop-Range	0 to 2,0 V DC	RollerDrive does not rotate
Resolution A/D conversion	8 bit	
Input resistance	66 kΩ	
Time constants	4,5 to 5,0 ms	

10.3 Translation of the original Declaration of Conformity

EU Declaration of conformity

EMV-Richtlinie 2014/30/EU
RoHS-Richtlinie 2011/65/EU

The manufacturer

Interroll Software & Electronics GmbH
Im Südpark 183
4030 Linz
AUSTRIA

hereby declares that the

- **Interroll AdControl**

conforms to the applicable provisions and the associated CE marking in accordance with the aforementioned Directives.

Authorised for compiling technical documentation:
Interroll Software & Electronics GmbH, Im Südpark 183, 4030 Linz

Andreas Eglseer
Managing Director, Interroll Software & Electronics GmbH
Linz, 01.07.2022

10.4 UKCA Declaration of Conformity

Declaration of conformity

UK Electromagnetic Compatibility Regulations 2016

UK Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The manufacturer

Interroll Software & Electronics GmbH
Im Südpark 183
4030 Linz
AUSTRIA

hereby declares that the

- **Interroll AdControl**

conforms to the applicable provisions and the associated UKCA marking in accordance with the aforementioned Directives.

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Andreas Eglseer
Managing Director, Interroll Software & Electronics GmbH
Linz, 01.07.2022

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