

EOS – EBRA20-UCM package

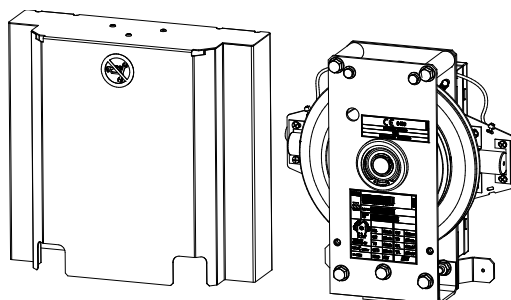
Operation manual

Blatt/sheet PM.7.002981.EN.1
Datum/date 03.07.2013
Stand/version D-24.03.2016
Geprüft/approved WAT/MZE



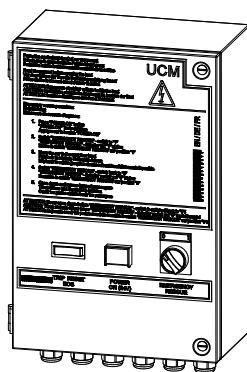
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EOS UCM package EBRA20-UCM Insert for operation manual PM.7.002883.EN

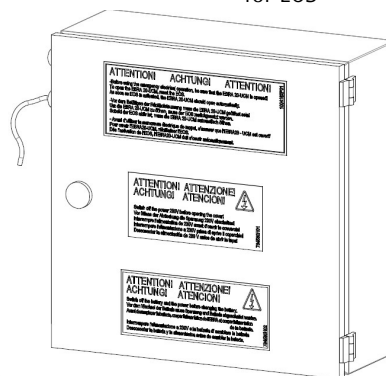


EOS
Electronic Overspeed Governor

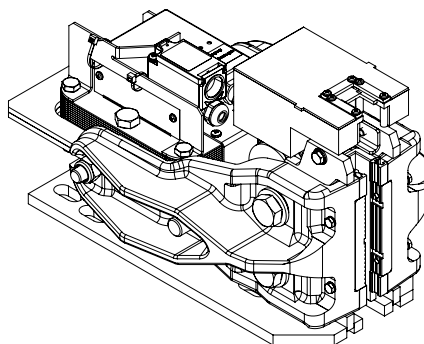
EOS Electronic
Interface mit USV



EBRA20-UCM control box
for EOS



EBRA20-UCM



Original instruction

www.wittur.com

Product manufacturer reference can be found on the product type label.
For any support or further questions please contact your trading office.



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Änderungen vorbehalten!

Subject to change without notice!

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1 General

1.1 General information

This insert is an appendix to the general operation manual for EOS with EOS-Electronic Interface used for protection against uncontrolled car movement. (PM.7.002883.EN).

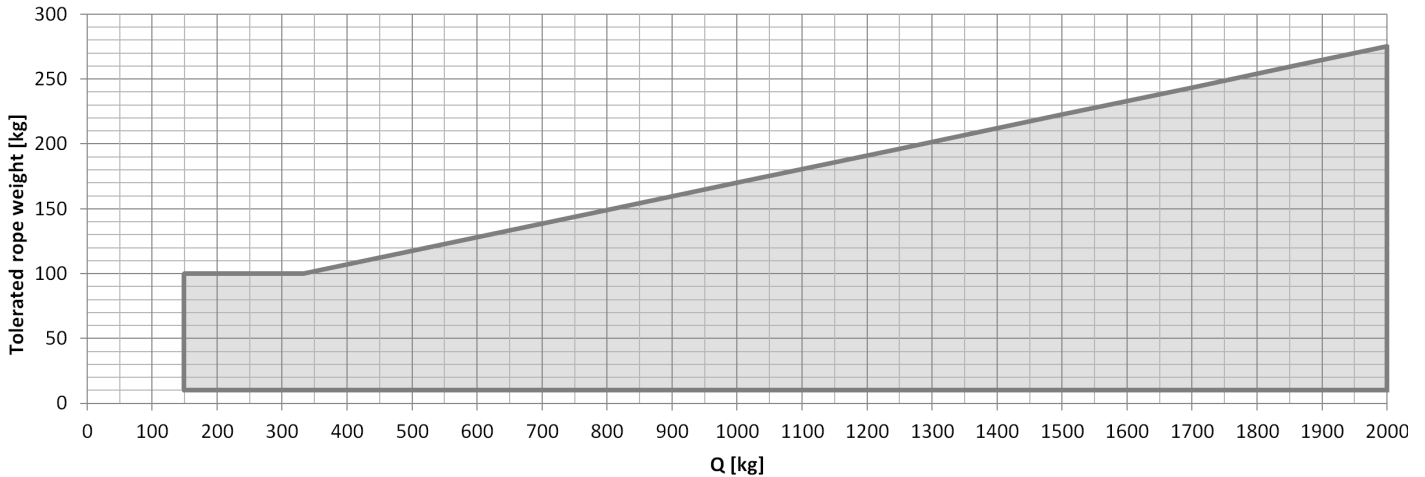
All parameters mentioned in this insert are referring to descriptions and test methods in the manual mentioned before.

2 Field of application for EOS with EBRA20-UCM

If the specified requirements are met, it is guaranteed by a certificate, that the specified terms are met.

2.1 Requirements

- The used components (EOS and EBRA20-UCM) shall be operated within their specification.
- This package is only designed for rope lifts according to EN81-1 :1998-A3:2009 or EN81-20:2014 with 1:1 or 2:1 suspension.
- The package can be used from 150kg nominal load up to 1700kg at drawn guide rails and up to 2000kg at machined guide rails.
- Weight balance 40% to 50%. The weight balance indicates at which load (as a percentage of the maximum nominal load) the counterweight is equal to the weight of the car plus load
- The max. possible system acceleration should be max. 2,5 m/s² according to EN81-50:2014 - 5.8.1 The system acceleration indicates the highest possible acceleration of the car at the worst conditions of loading and uncontrolled driving force.
- The ratio between car weight and nominal load (P/Q) has to be in the range from 0,6 to 2,2.
- The equivalent mass of the drive, all pulleys, the compensation ropes and the compensated hoist ropes m_{EQ} has to be between 10kg and max $0,85 \times Q$ (nominal load). The mass m_{EQ} is the mass which would, if attached to the car, store the same kinetic energy like the rotating mass of the driving element (engine, transmission, drive pulley, pulleys).
- The switch time of the main contactor has to be lower or equal 40ms.
- The combination with EBRA20-UCM an EOS type 2 is used with filter settings Par 5 (see TC.7.002984.DE chapter 2.8). In case of using other filter settings the compliance with the
- The EBRA20-UCM has to be adjusted according the package requirements. Check Type label for conformity.
- The package has to be used complete that means EOS, EBRA20-UCM + EBRA20-UCM Control box for EOS and the EOS Electronic Interface together.
- The mass of the unbalanced total hoist ropes has to be within the shaded area in the diagram on the next page.



2.2 Preprocessed requirements

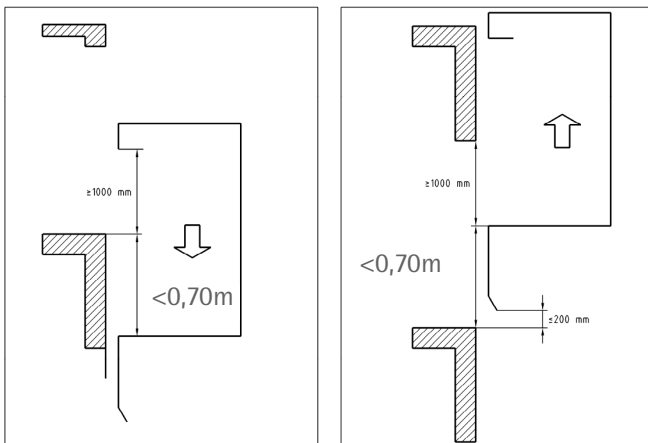
- The deceleration remains within the required range according to EN81-1: 1998 + A3:2009 and EN81-20:2014.
- The movements is stopped within a path of ± 0.70 m. The other required dimensions have to be checked according the sketch mentioned in chapter 9.11.5 of EN81-1:1998-A3:2009 or chapter 5.6.7.5 of EN81-20:2014.



The door height has to be at least 2m and the the apron has to be at least 750mm according to EN81.



The requirements for the complete system according to EN81-20:2014 have to be checked on site.



- The structure of the UCM-system meets the requirements of EN81-1:1998-A3:2009, chapter 9.11 and EN81-20:2014 chapter 5.6.7.

These values are met for up to 100% of the rated load of the car. (100% of Q)

3 Name plate, designation and identification


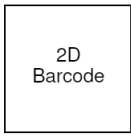
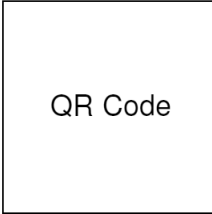

3.1 Labeling

In addition to the CE- and type label on each certified part of the UCM package there is also a package label for the complete certified UCM protection system according to LD 2014/33/EU.

The package label has to be fixed to the elevator controller at a clearly visible place.

The Marking gives following data:

- Name and Address of the manufacturer
- Type of the UCM protection package
- Type examination number
- Production date of the system
- Serial number (clear text and barcode)
- CE-Marking

Prod. Date: YYYY/MM/DD 	Type: Package Type <div data-bbox="520 1294 651 1429">  </div> Serial Number: UCM/123456-010\$001	<div data-bbox="1002 1193 1214 1406">  </div> Traceability
1020939PXX	Cert. No.: Certificate Number Manufacturer: WITTUR Austria GmbH Sowitschstrasse 1 AT-3270 Scheibbs	 0408

4 Installation

4.1 General


With the exception of the EBRA20-UCM control box for EOS the installation shall be performed as mentioned in the operation manual of the component.


The interface box differs from the single component delivery to work in combination with the EOS.

The physical installation of the box in the machine room or the controll cabinet can be performed according PM.7.002847. The electrical installation is shown in chapter 3.2.


For the use of the EOS-EBRA20-UCM package the EOS Electronic Interface has to be switched to continuous mode to avoid gripping of the EBRA20-UCM after 30 minutes caused by the standby of the EOS.

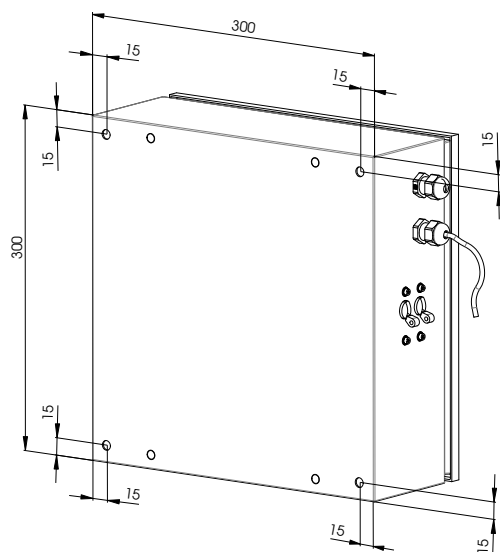
For activating the continuous mode switch the DIP-switch S1/1 on the EOS Electronic Interface ON.

 It is recommended to install the interface box with battery backup within 4 months to reduce the risk of defekt batteries due to deep discharge.

 The box has to be mounted in upright position. The text on the stickers has to be horizontally readable.

When using the component without box take care on the installation position of the conductors according their manual.

 Take care of the hole pattern as shown in the sketch.




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4.2 Electrical installation

The electrical installation is done in two parts:
Wiring of the Control Electronic (3.2.2) and wiring of all components (3.2.3). In case of ordering the Control Electronic incl. box the wiring was already done in factory.

 Wires should be unipolar and double coated with a cross section of at least 0,75mm²! The wiring has to be done EMC compatible.

 Take care on the EBRA20-UCM polarity. Otherwise the brake will not open.

4.2.1 Technical Data

The serial terminal has to be assigned as follows:

Power supply:

X1/1: GND

X1/2: 24VDC (-15% / +10%)

Fused with 2A

Energy consumption: 7W permanent

Power supply electrically isolated

Interruption free when used without battery

X1/3, X1/4: Connection coming from EOS safety circuit (Detektion if EOS safety circuit is open or closed)

X1/5, X1/6: Connection to lift-safety circuit: In case of detecting open EOS safety circuit (X1/3, X1/4) the contact X1/5, X1/6 is opened.

Maximum contact voltage: 240VAC / 300VDC

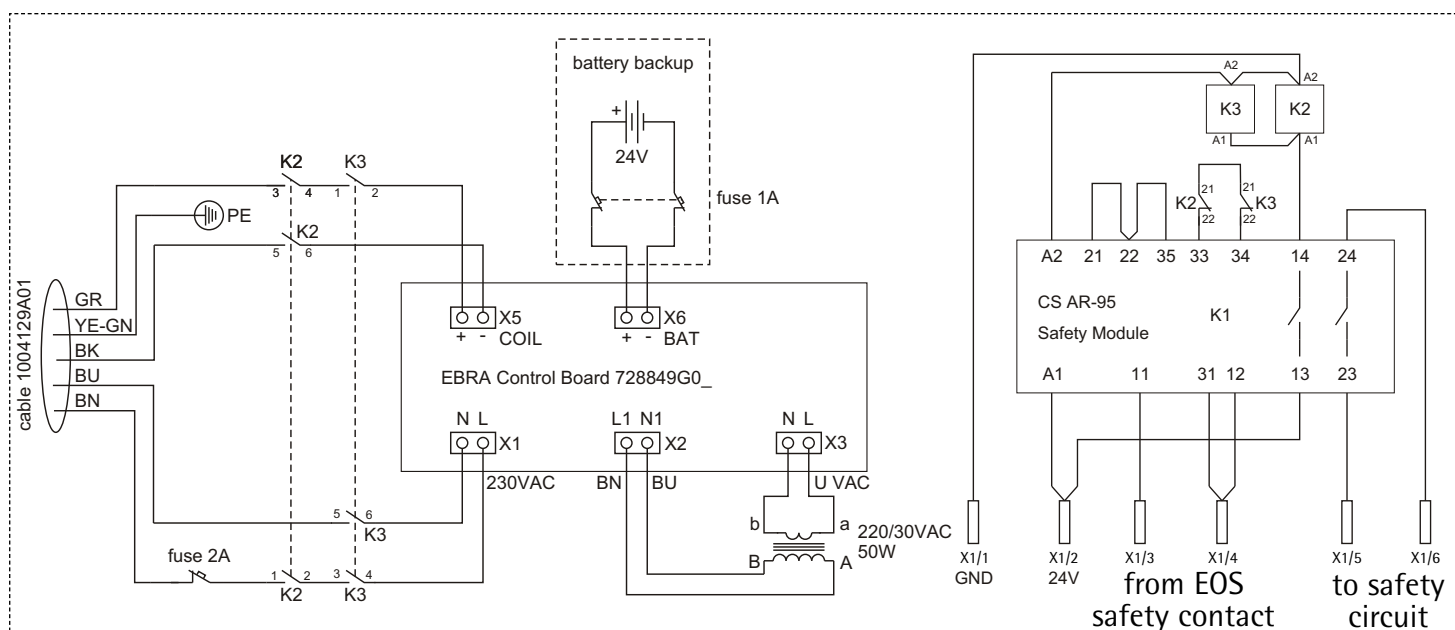
AC15 (50+60Hz): 230VAC / 3A

DC13: 24V / 4A

Minimum switch current: 10mA

4.2.2 Wiring of the control electronic for EOS

When ordering the control electronic without box the components have to be integrated to the control cabinet and wired according the following circuit diagrams:



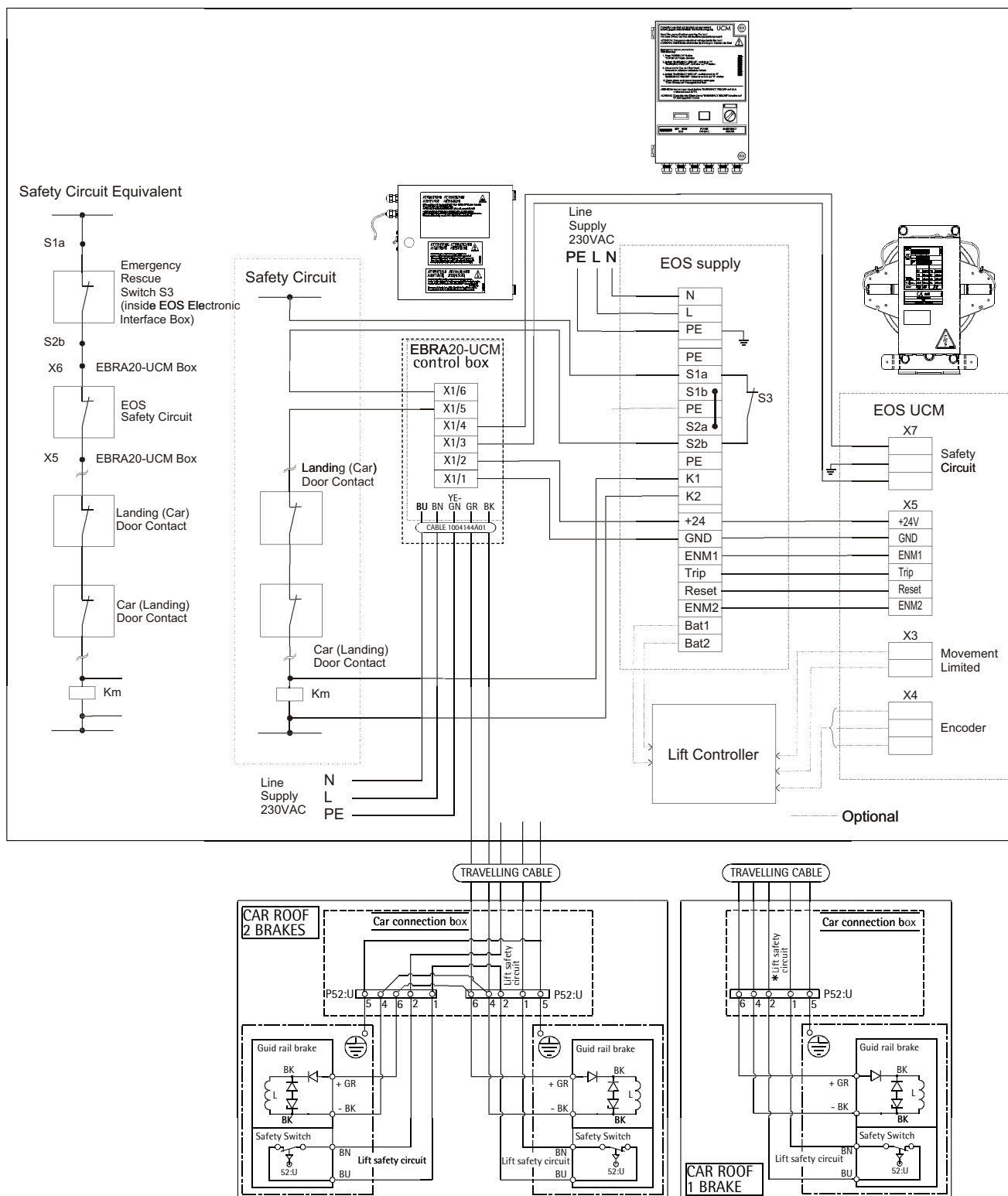
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Operation manual

Blatt/sheet PM.7.002981.EN.8
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Geprüft/approved WAT/MZE

4.2.3 Wiring of the EBRA20-UCM, EOS, EOS Elektronik Interface and control box for EOS

Safety circuit without parallel loop to the door contacts and with EOS Electronic Interface incl. box.
This type occurs in simple installations without advanced door opening and without releveing.



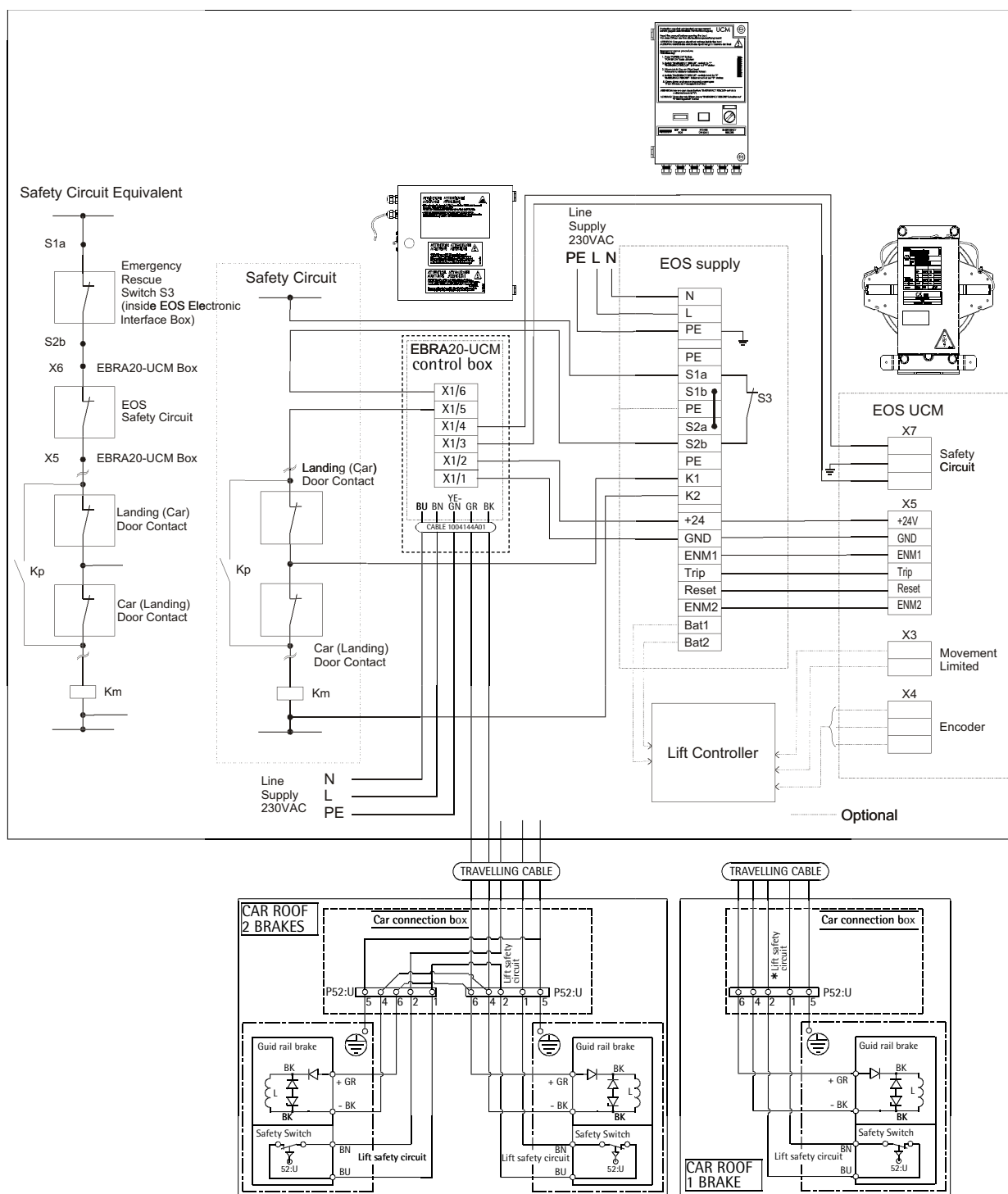
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Safety circuit with parallel loop to the door contacts and with EOS Electronic Interface incl. box.

This type occurs in installations with advanced door opening, releveing or other functions which make a bypass of the door contacts necessary.



The tap between the contacts ensures, that UCM remains active, as long as the doors are open, even if the parallel circuit Kp is closed.

5 Adjustment tasks

- (1) Reset the EOS after installing it according its manual and put the power ON (1) at the Control box for EOS to supply 230VAC to EBRA20-UCM. The magnet closes and the brake opens.
- (2) Remove the transport clamp from the back side of the magnet and retain it for later application.
- (3) Check that EBRA20-UCM magnet releases when EOS is tripped or reset (2) and closes after the EOS reset is finished.
- (5) When battery voltage is about 24VDC, check that the EBRA20-UCM remains open even if the power is cut from the 230VAC supply.



Otherwise, please contact us at WITTUR for technical support.

- (6) Leave the battery ON after testing. Otherwise EBRA20-UCM will drop at a blackout and emergency rescue gets more difficult.



After a reset of the EOS there is 200VDC for opening the EBRA20-UCM on the magnet. The voltage drops after 2 seconds to about 30VDC.

Working with battery backup:



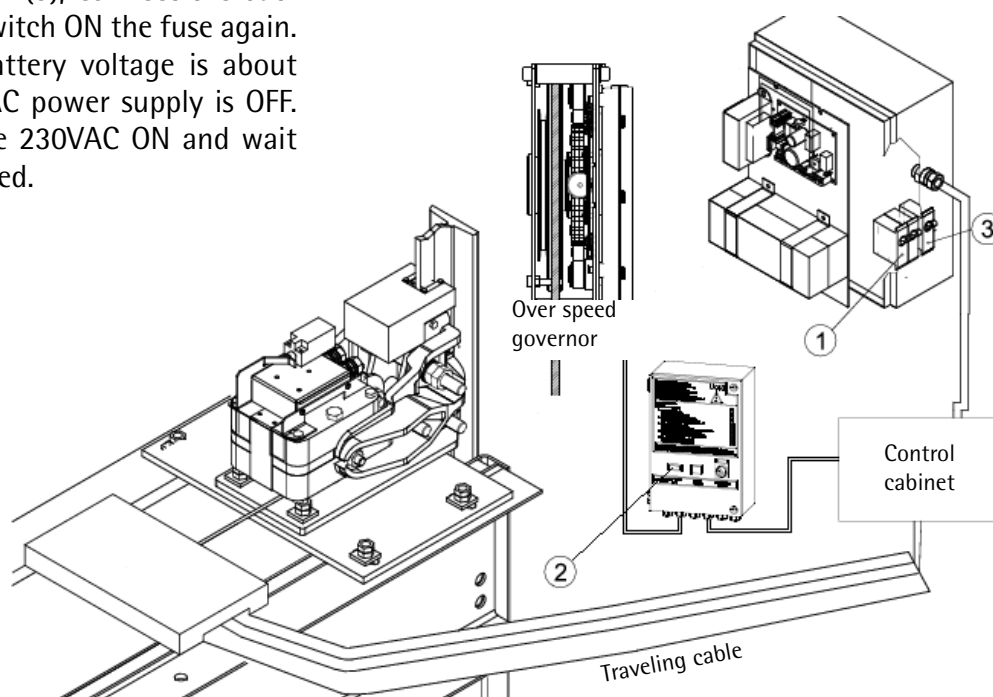
If the optional battery is not used a battery or UPS has to be used to prevent EBRA20-UCM from uncontrolled braking for min. 3h.

- (4) Inspection of the batterie:
FIRST Switch battery OFF (3), connect the battery plugs if loose and switch ON the fuse again. Then check that the battery voltage is about 24VDC when the 230VAC power supply is OFF. Otherwise switch on the 230VAC ON and wait until batteries are charged.

Testing the switch-off monitoring of the safety relays:

Hold the activator of the energized conductor K2. Reset the EOS while holding the activator. The conductor K3 should drop and stay dropped until the activator of K2 is released. After releasing the activator of the conductor K2 both conductors have to be activated automatically.

The procedure has also to be done with the other conductor.



6 Limit values for UCM test case

6.1 Tolerated brake distances in UCM test case

The UCM-functionality of the EOS/EBRA20-UCM package has to be checked periodically. The general-test method can be used this package (EOS in combination with the EBRA20-UCM + Interface box and the EOS Electronic Interface (See PM.7.002883 chapter 5)).



It is not allowed testing full brake force of the brake by using recall-drive or handweel. Brake or guide rail could get damaged.



During the test the ERBA20-UCM has to be the only braking element. Motor brake or other systems that can decrease the brake distance have to be bridged.



The mentioned test is the dynamic test for the UCM-function only. Therefore all other test concerning the EOS or the EBRA20-UCM have to be performed according their manuals. Also the switch-off test (see page 10) of the safety relais has to be performed periodically.



The measured stopping distances are based on the acceleration set in the controller or inverter and shall not exceed the values shown in the diagram below.

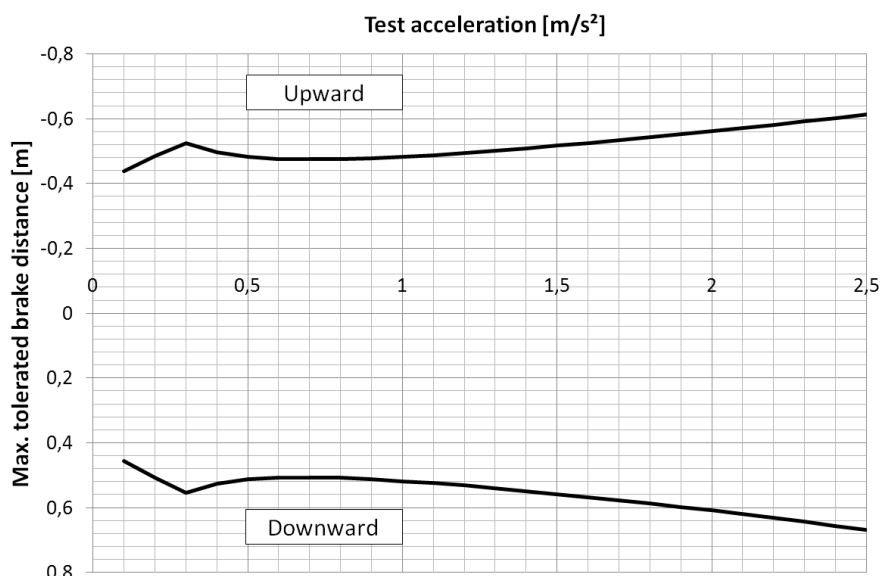
The use of the combination EOS + EBRA20-UCM in a System outside of the Application range of the package certificate is allowed, if a calculation for emergency and test case is available from the distributor. The calculated values must be kept at the mentioned tests. In this case the values shown in the diagram are no longer valid.

Because of Calculation of Extrem values (maximum drop out times, negligence of shaft efficiency and internal engine braking effects) the measured values on site have to be lower.

A check of the system acceleration with ADIAS is recommended at the inspection test in case of unknown accelerations. The measured values have to be stored in the lift documentation for periodical tests.



Reconnect ENM1 and ENM2 and remove all bridges used for the test before the lift is set back into service!



7 Emergency rescue

The rescuing of trapped passengers must be performed by trained professionals only.

7.1 Important notes



The EBRA20-UCM is released when the reset switch of the EOS is used and opened again automatically when the reset is finished.

It is important to switch of the EBRA20-UCM power cannot be moved following the standard procedures given for elevators without this additional brake.

ALWAYS, check first if the EOS has been activated i.e. the car has run overspeed or UCM was detected.

Check the condition of the machine for signs of wear or damage. Ensure that the machine brake is functional.

Determine the position of the car in the shaft and if it has to be moved to rescue trapped passengers. There are three cases in which rescuing can become necessary:

on the control box when the EOS should be reset without opening the EBRA20-UCM. The EBRA20-UCM can be opened afterwards by switching on the power on the EBRA20-UCM control box.

The EBRA20-UCM has to be opened before using emergency electrical operation! Guide or brake lining could get damaged otherwise.

7.2 Control box inspection window

Through the inspection window of the EBRA20-UCM control box you can see three small flashing lights (PWR, CH1, CH2) on the safety module. At normal operation all three lights are shining. If CH1 and CH2 is not shining anymore, the EBRA20-UCM is fallen off and brakes.

7.3 Rescuing trapped passengers



Rescuing trapped passengers in exceptional situations is somewhat different in elevators where EOS+EBRA20-UCM is used, than it is in traction elevators without any ascending car overspeed protection.

The main difference is, that the EBRA20-UCM is an independent brake which is released in overspeed situations or UCM and resets automatically with the EOS if the power is switched on

Rescuing trapped passengers might become necessary under the following conditions where EBRA20-UCM is actuated and braking the elevator car.

- (1) Power ON and EOS has been activated. The car has run overspeed or UCM was detected (refer to chapter 7.3.1)
- (2) Power OFF, but the EOS has not been activated (refer to chapter 7.3.2)
- (3) Car cannot be moved following 1 and 2 (Power OFF) and the EBRA20-UCM dropped. Two or more independent failures occurred at the same time (refer to chapter 7.3.3).

7.3.1 Power ON and the EOS has been activated

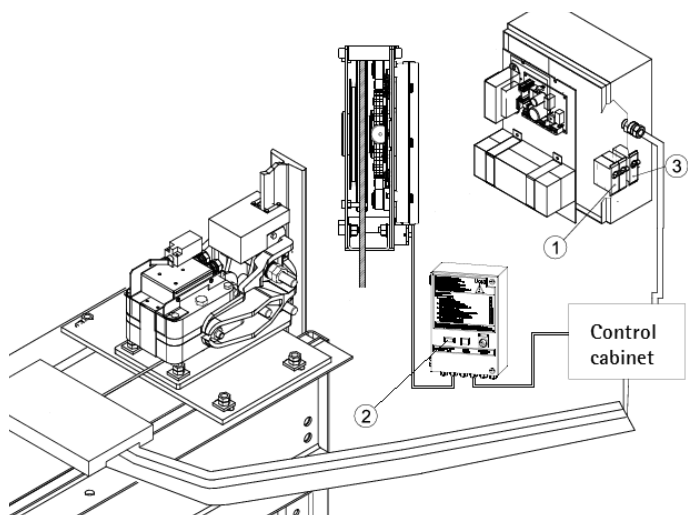
The car has run overspeed or UCM has been detected.

- Inform the passengers that you are about to let them out and they must not try to do anything by themselves.
- Switch OFF the battery backup (1) and the power supply (3) from the EBRA20-UCM control box.
- Reset the EOS by the switch on the EOS Elektronik Interface (2).
- Switch the power supply of the EBRA20-UCM (3) ON again in order to get EBRA20-UCM to open.

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KEEP FINGERS ON THE POWER SWITCH so that the brake can be actuated by switching the power off if the elevator car rushes up or down.

- Switch ON the possible battery backup (1) from the EBRA20-UCM control.
- If the car does not move even if the EBRA20-UCM brake is open follow the rescue plan given for that specific elevator type to get the car to the door zone.



Normally: open the motor brake and turn the hand wheel.

Resp. if the elevator is equipped with recall-drive: drive as far as to enable passenger rescuing through car doors.

- Open the door and let the passengers exit.

7.3.2 Power OFF, but the EOS has not been activated

- Inform the passengers that you are about to let them out and they must not try to do anything by themselves
- Due to the battery or USV backup for EBRA20-UCM (keeps the brake system open for approx. 3 hours and then drops) the brake is not actuated and the car can be moved following the rescue plan given for that specific elevator type.

Änderungen vorbehalten!

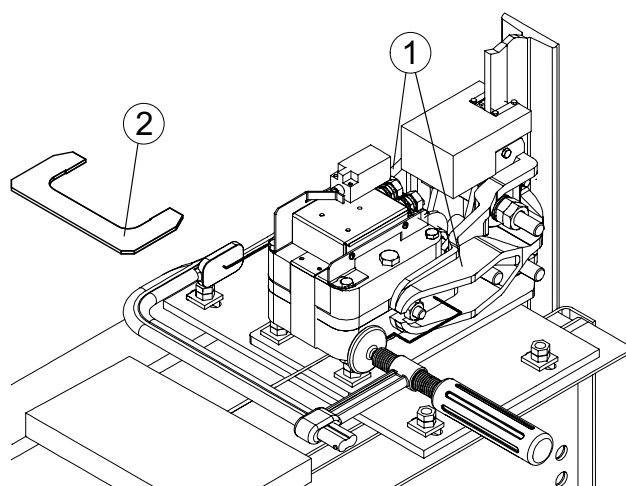


Before starting the rescue, the „Emergency Rescue Switch“ on the EOS Electronic Interface has to be switched. Otherwise EOS will trip after 15cm by UCM.

7.3.3 Car cannot be moved following 1 and 2

Power OFF and the EBRA20-UCM dropped

- Inform the passengers that you are about to let them out and they must not try to do anything by themselves.
- If a hand wheel is available, try to move the car into the next door zone (even if EBRA20-UCM is closed); resp. try to rescue the people without moving the car. If that is not possible, continue in the next step
- Go to the car roof (take care for proper safety) and open the EBRA20-UCM by pressing the brake forks (1) – e.g. by means of a C-clamp. After that the magnet can be blocked with the delivered transport clamp (2)



Make sure that the car frame cannot move uncontrolled before you access the car roof, – e.g. by fixing the counterweight.



STOP pressing the brake forks (1) if the car starts to move



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- Release the counterweight from its fixation against uncontrolled movement after the EBRA20-UCM has been manually opened and you have left the car roof
- If the car does not move even if the EBRA20-UCM brake is open, follow the rescue plan given for that specific elevator type to get the car to the door zone.

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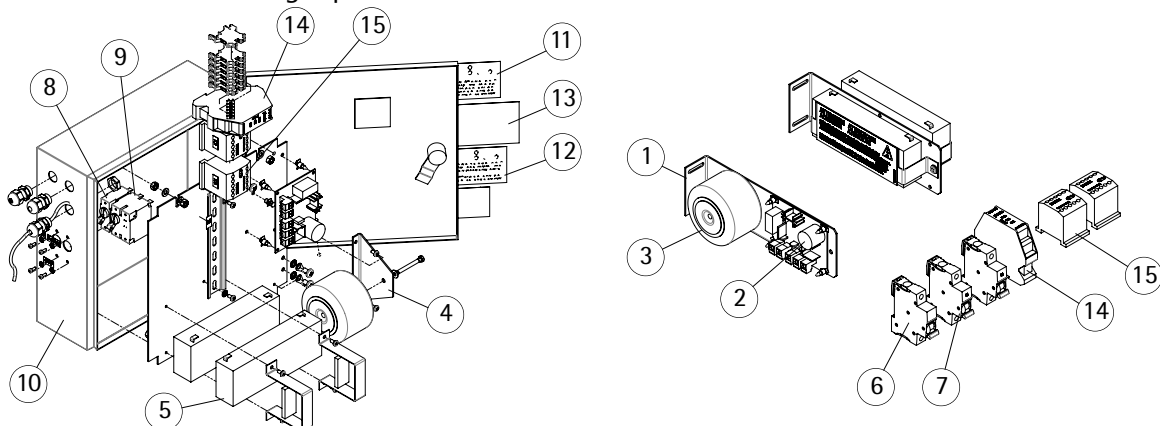
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8 Spare part list

Pos.	Component	Spare part	Number	Art. No.
1	Fixing plate		1	602011H01
2	Connection block	with diodes	1	720504G01
3	Transformator	230/30V 81VA	1	604200G01
4	Transformator fixing		1	604213H01
5	Battery	12V 2.1 AH	2	253300
6	Circuit breaker	Siemens 5SX2102-7 - 2A-230V	1	273268
7	Circuit breaker	Siemens 5SX2101-7 - 1A-230V	2 *	273267
8	Circuit breaker	JA1S-A8-AK-04-H-L-2A-10	1	273324
9	Circuit breaker	JA2S-B3-BK-04-H-A-1,2-2	1	273321
10	Electronic box	when seperate box and NO battery is included	1	1004123A01
		when controller cabinet and NO battery is included	1	1004123A02
		when seperate box and battery is included	1	1004123A03
		when controller cabinet and battery is included	1	1004123A04
11	Warning sticker	117x180mm, EN, DE, FR, IT, SP, FI, SV, NO, DA, NL, RU, PL, CS, EL	1	734580G02
12	Warning sticker	117x180mm, EN, DE, FR, IT, SP, FI, SV, NO, DA, NL, RU, PL, CS, EL	1	734580G03
13	Warning sticker	190x71mm, EN, DE, FR	1	1004162P01
		190x71mm, IT, ES, PT	1	1004162P02
		190x71mm, CS, HU, PL	1	1004162P03
		190x71mm, NL, SV, TR	1	1004162P04
		190x71mm, Mandarin, HE, AR	1	1004162P05
14	Safety module	Safety module 2NO, category 4, EN81 compliant (CS AR-95V024)	1	W002440
15	Contactora	Contactora,4kW/400V,DC operated	2	W002439

* Switch can be ordered also as a single part





WITTUR manufacturing locations

Product manufacturer reference can be found on the product type label.

ARGENTINIA

WITTUR S.A.
Av. Belgrano 2445
Sarandi - Pcia. de Buenos Aires, Argentina

ITALY

WITTUR S.P.A.
Via Macedonio Melloni no 12
43052 Colorno, Italy

AUSTRIA

WITTUR Austria GmbH
Sowitschstrasse 1
3270 Scheibbs, Austria

INDIA

WITTUR Elevator Components India Pvt. Ltd.
Survey nos 45/1B , 3 & 4 , Pondur Village
Sriperumbudur - 602 105
Tamil Nadu, India

BRAZIL

WITTUR LTDA
Rodovia Celso garcia Cid
1406 Cambé Parana, Brazil

SLOVAKIA

WITTUR S.R.O.
Priemyselná ulica 2747/7
963 01 Krupina, Slovakia

CHINA

WITTUR Elevator Components (Suzhou) Co. Ltd.
18 Shexing Road, FOHO Economic Development Zone,
Wujiang City, Jiangsu Province,
P.R. China 215214

SPAIN

WITTUR ELEVATOR COMPONENTS S.A.U.
Polig. Ind. Malpica, Calle E - Parcela 8
50016 Zaragoza, Spain

GERMANY

WITTUR ELECTRIC DRIVES GMBH
Offenburger Str. 3
01189 Dresden, Germany

TURKEY

WITTUR Asansör San. ve Tic. A.S.
Y Dudullu Organize - Sanayi Bolgesi n° 13
34776 Istanbul, Turkey