

# Handover Acceptance Certificate

Installer	
Name	Schindler Ltd
Address	400 Deshwood Lang Road, Bourne Business Park, Addlestone Surrey KT15 2HJ
Installation	
Name	Plot 9 - EMG
Address	East Mids Gateway, Derby DE74 2DL
Client	
Name	Winvic Construction Limited
Address	Bramoton House, 19 Tenter Road, Northampton NN3 6PZ

#### The Installer hereby declares that the following product may be put into service:

Product	Schindler 3300	A Station of the second
Туре	Electric Traction Lift (MRL Gearless)	
Control	Bionic 6	and the second second
Travel (m)	4.200	
No. of stops	2	
Speed (m/s)	1.00	
Load (kg)	800	and the second
Capacity (no. of persons)	10	
NI Contract No.	11641098	
SM Number	11641098	
Year of installation	2022	The second s
PCM Type / No. of visits	12 months / 4 Visits	
Application	For the transport of passengers according to the instruction manual	
Cube Connected	Yes 🖬 No 🗆 (If no, state why):	

It is a condition precedent to the lift being put into service and to the signed acceptance, that the Declaration of Conformity has been signed.

For and on behalf of the Installer - I, the undersigned, hand over the above product:

27 31/5/ Date MEXOR BAL Signatory / Signature Function NI/ For and on behalf of the Client – I / We the undersigned have accepted the above product in good working order and condition, and understand that the Guarantee Period commences from this date:
Date Signatory / Signature Name Function Signature ecsequer SSM. de Copyright @ 2021 Schindler Ltd Template Version 2.1 (UKC) - Form 0086 2 (Revised 10 April 2015) 1/1



# UK Declaration of Conformity for Lifts

Installe
Name
Address

Schindler Ltd 400 Dashwood Lang Road, Bourne Business Park, Addlestone, Surrey KT15 2HJ

	Authorized Representative	
	Name	N
-		120

Address

# The Installer hereby declares that the following Lift:

Product Name		Schindler 3300			Identification Number	59102010
Technical Platform		ating the state	-	A CARLES		
Туре	<b>N</b>	Person Lift		Person/Goods Lift		Goods Lift
Commission No.		11641098	when			
Address of installed Lift		Plot 9 - EMG East M	lids Gateway	Derby DE74 2DL		a contraction of the second
Year of Installation		2022				All half and the second

## Is in conformity with the following Regulations:

2016 No.1093 / The Lifts Regulations 2016 amended by The Product Safety and Metrology (EU Exit) Regulations 2019

# By application of the following Designated Standards (applicable designated standards are marked):

54 S.		
	BS EN 81-20:2014	Safety rules for the construction and installation of lifts — Lifts for the transport of persons and goods — Part 20: Passenger and goods passenger lifts
	BS EN 81-50:2014	Safety rules for the construction and installation of lifts — Examinations and tests — Part 50: Design rules, calculations, examinations and tests of lift components
	BS EN 81-21:2009 + A1: 2012	Safety rules for the construction and installation of lifts — Lifts for the transport of persons and goods — Part 21: New passenger and goods passenger lifts in existing building
	BS EN 81-22:2014	Safety rules for the construction and installation of lifts — Lifts for the transport of persons and goods — Part 22: Electric lifts with inclined path
	BS EN 81-28:2003 BS EN 81-28:2018	Safely rules for the construction and installation of lifts — Lifts for the transport of persons and goods — Part 28: Remote alarm on passenger and goods passenger lifts
	BS EN 81-58:2003 BS EN 81-58:2018	Safety rules for the construction and installation of lifts — Examination and tests — Part 58: Landing doors fire resistance test
	BS EN 81-70:2003 + A1:2004 BS EN 81-70:2018	Safety rules for the construction and installations of lifts — Particular applications for passenger and goods passenger lifts — Part 70: Accessibility to lifts for persons including persons with disability
	BS EN 81-71:2005 + A1:2006 BS EN 81-71:2018 Category: 00: 01: 02	Safety rules for the construction and installation of lifts — Particular applications to passenger lifts and goods passenger lifts — Part 71: Vandal resistant lifts
	BS EN 81-72:2015	Safety rules for the construction and installation of lifts — Particular applications for passenger and goods passenger lifts — Part 72: Firefighters lifts
	BS EN 81-73:2016	Safety rules for the construction and installation of lifts — Particular applications for passenger and goods passenger lifts — Part 73: Behavior of lifts in the event of fire
	BS EN 81-77:2013 BS EN 81-77:2018 Category: □0; □1; □2; □3	Safety rules for the construction and installations of lifts — Particular applications for passenger and goods passenger lifts — Part 77: Lifts subject to seismic conditions

[emplate Version 2.3 (2019-01-19) - Form 0086 UK 3300 (Revised 1 September 2021)

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1/2



# UK Declaration of Conformity for Lifts

## As proven by the following Conformity Assessment:

Name of Approved / Notified Body	LIFTINSTITUUT BV			and the states
Address	Buikslotermeerplein 381, 1025 XE Amsterdam, The Netherlands			
Identification Number:	0400			
Type Examination Certificate Number:	NL 04-400-1002-004-27			
Final Inspection			Product / Production Quality	Assurance
Name of Approved / Notified Body	N/A		Name of Approved / Notified Body	N/A
Address		Or:	Address	The second second second
Identification Number:	C. R. C.		Identification Number:	Party Contraction of the
r.				
Full Quality Assurance			The second s	THE STREET COL
Name of Approved Body	Bureau Ventas UK Limited		D. I. O	at the second second second
Address	2nd Floor Atlantic House, Atlas	Business	Park, Simonsway, Manchester M22 5PR	עוו
Identification Number:	0041		(Note: If $CE0041$ is fixed inside the lift	t, this is equivalent to 260041)
Design Examination		1		
Name of Approved Body				
riand errippieree eeej	and the second			
Address		-		
Address Identification Number: r: Jnit Verification				
Address Identification Number: r: Unit Verification				
Address Identification Number:  r:  Unit Verification Name of Approved Body	NA			
Address Identification Number:	N/A			
Address Identification Number:	NA PLOT 9 EMG		31/5	122



#### **Basic Information for the Customer** 2

#### Acknowledgement of Customer Documentation 21

		and the second and				
Identification of the elevator Installation	Installation No.: Address:	11641098 Plot 9 - EMG East Mids Gateway				
	Marg. and	Derby				
	Installation Location:	DE74 2DL,				
	Year of Installation	2021				
	STREET,					
Final Owner	Name.	SEGRO				
	Street:	1 New Burlington Place,				
	Post Code:	W1S 2HR				
Confirmation of	The undersigned confirm	ns herewith the receipt of 1 x hard copy of the				
Receipt	Owner Documentation r	nanual together with 1 x CD Copy.				
	The documentation cons	iists of:				
	Declaration of confo	ormity				
	Basic characteristic	s of the elevator				
	Logbook	a 1 9 P a 1 1 5 3				
	Plans of elevator in	the building (layout drawing)				
	Electrical schematic	cs of the safety and main power circuit				
	List of safety compo	onents				
	Basic characteristic	s of traction media				
	General maintenance instructions for the elevator					
	Maintonanco instru	oils and greases				
	Maintenance instructions for safety components					
	Rescue operations	instructions				
	Nescue operations					
	In the case where the bu ownership of the building passed on.	uilding/elevator is used by other persons, or if the g changes, the Owner Documentation has to be				
Signature	Place / Date: AS	ABOVE 9th MAY ZOZZ				
	Name of the Owner:	H CEARNER LOWVIE				
	Position: 55 9	/				
	Signature of the Owne	r. Mely				
	Signature of the Install	er. A ark				
	Above Final Owner De	tails Correct: YES NO				
Schindler 3100/3300/530	00/6300	J 43402603 / 01				
		14 / 269				
Copyright©20201NVENT	IOAG					



# 2 Basic Information for the Customer

# 2.1 Acknowledgement of Customer Documentation

Identification of the elevator Installation	Installation No.: Address: Installation Location: Year of Installation	11641098 Plot 9 - EMG East Mids Gateway Derby DE74 2DL, 2021
Final Owner	Name. Street: City: Post Code:	SEGRO 1 New Burlington Place, London W1S 2HR
Confirmation of Receipt	The undersigned confirm Owner Documentation m	s herewith the receipt of 1 x hard copy of the anual together with 1 x CD Copy.
	The documentation consis Declaration of confor Basic characteristics Logbook Plans of elevator in t Electrical schematics List of safety compor Basic characteristics General maintenanc Table of lubricants, o Maintenance instruct Instructions for norm Rescue operations in In the case where the bui ownership of the building passed on.	sts of: mity of the elevator he building (layout drawing) s of the safety and main power circuit nents of traction media e instructions for the elevator ils and greases tions for safety components al use of the elevator hstructions lding/elevator is used by other persons, or if the changes, the Owner Documentation has to be
Signature	Place / Date:	
	Name of the Owner:	
	Position:	
	Signature of the Owner:	
	Signature of the Installe	r:
	Above Final Owner Deta If owner details incorrect, plea	ails Correct: YES NO se complete and return page 5

## Schindler 3100/3300/5300/6300



# 2.2 Logbook

Description of the Elevator

Installation

Electric gearless drive without machine room.

Туре:	Schindler 3300
Installation No.:	11641098
Location of elevator:	Plot 9 - EMG
Address: Owner:	East Mids Gateway, Derby, DE74 2DL, SEGRO

Put Into Service

Date:

Observation:

#### Maintenance Company

Name	Schindler Ltd		
Address	400 Dashwood Lang Road		
Town	Addlestone, Surrey KT15 2HJ		
Telephone / Fax:	01932 758100 / 01932 758258		
Start date for Maintenance:			

	Description	Date	Name & Signature
Major Repairs/ Important Modifications			



## 2.3 Basic Characteristics of the Installation

Identification of the Elevator	Traction elevator without mac	hine room.	Schin
Owner Data	Owner: S	SEGRO	
	Address: 1 L	New Burlington Place, ondon, W1S 2HR	
Installer	Name: Sc	hindler Limited	
Installation	Installation No.: 1 Address: F E	1641098 Plot 9 - EMG East Mids Gateway DerbyDE74 2DL	
	Layout drawing ref no:	JKC 11641098	
Characteristics of The Installation	Number of levels served: Car Entrances: Rated load: Number of persons: Type (passenger, passenge goods only): Max. starts per hour: Travel (mm) : Rated speed: Voltage (V): Power supply: Number of ph Power (Kw): Type of control: Suspension: Number of traction media: Car safety gear type: Safety gear on counterweigh	$\begin{array}{c} 2\\ 1\\ 800 \text{ kg}\\ 10\\ \text{r goods,}  \text{Passenger}\\ \text{KA 120}\\ 4200\\ 1.00 \text{ m/sec}\\ 400\\ \text{nases} =  3L, \text{ N + PE or } 3L + \text{PE}\\ \text{res} =  5\\ 50 / 60 \text{ HZ}\\ 4.60\\ \text{BIONIC microprocessor}\\ \text{Belts}\\ 2/4\\ \text{GED 10BS}\\ \text{nt:} \qquad \text{Not applicable} \end{array}$	
Machine Positioning	Machine located inside the h	noistway fixed on guide rail.	
Type of Drive	Gearless machine with close	ed loop.	

Schindler 3100/3300/5300/6300



## 2.4 Removing the Elevator out of Service for some Time

If the elevator has been commissioned, but used as a building elevator, or if it has been taken out of service for an extended period of time, the following work must be carried out by a competent person before the installation is put back into normal operation:

- Clean and lubricate the installation
- Replace damaged components
- Check and test the safety components

If the elevator is going to be switched off for periods greater than a month (guideline):

- Disconnect any emergency or back-up batteries
- Check manual evacuation procedure

If the elevator is to be switched off for longer periods, the following actions must be considered:

- If there is power available: At least once a month the elevator must be moved under it's own power for a few minutes throughout the whole hoistway.
- If there is no power, then the car and counterweight should ideally be suspended and the weight taken off the machine.



### 2.5 Notification to the Installer

Purpose

According to the product liability laws, Schindler as manufacturer must keep track of its installation(s) even after commissioning and handover. Therefore Schindler must be informed about any possible existence of dangerous conditions in the installation. Also changes in ownership should be communicated to Schindler.

	Name	
Installation		Schindler Ltd
Company		
	Address	400 Dashwood Lang Road
		Addlestone Surrey KT15 2H I
	Town	Addiestone, ourrey KT to 210
	Tolophono / Foy	01932 758100 / 01932 758258
	Telephone / Fax:	
	Installation No.:	11641098
Identification of the	Address:	Plot 9 - EMG
elevator Installation		East Mids Gateway
		Derby
	Installation Location:	DE74 2DL.
	Year of Installation	2019
	Maria	05000
Owner	Name. Stroot:	SEGRU 1 Now Burlington Place
	City:	l ondon
	Post Code:	W1S 2HR
	1 031 0000.	WIG ZHIX
Change of Ownership	Date:	
	Name	
New Owner of the	Street:	
Installation	Citv:	
	Post Code:	
Description of fault or		
<b>Dangerous Condition</b>		
Signature of Owner	Date:	Signature:
of the Installation		

Schindler 3100/3300/5300/6300



# Lift Services Cleaning and Maintenance Regimes

This maintenance schedule which is to be followed from PC date year on year to ensure all plant and equipment is kept within warranty.

Please keep a log of these inspections so that records can be checked should an issue arise.

# PLEASE NOTE: THE CLIENT MUST LEGALLY HAVE A MAINTENANCE PACKAGE RUNNING ON THE LIFT TO ENSURE BUILDING INSURANCE AND LIFT COMPLIANCE ARE VALID.

### Code; ✓ Blue – Recommended ✓ Red – To Maintain Warranty

Item	Daily	Weekly	Monthly	3 Months	6 Months	9 Months	Annually	2 Yearly	5 Yearly	Certificates	Regime
Lift Maintenance Contract							✓			Handover Certificate DOC	The Client must legally have a maintenance package running on the lift to ensure building Insurance and Lift Compliance are valid.
Owner Maintenance											In addition to those examinations and tests which the owner of the installation entrusts to the maintenance organization, the owner needs to carry out the following checks periodically: <ul> <li>correct functioning of landing doors and landing door tracks</li> <li>stopping accuracy</li> <li>correct functioning of indicators</li> <li>landing push buttons</li> <li>car push buttons</li> <li>two-way means of communication in the car which provide permanent contact with a rescue service</li> <li>normal car light</li> <li>door reversal devices</li> <li>safety signs / pictograms</li> </ul>



Item	Daily	Weekly	Monthly	3 Months	6 Months	9 Months	Annually	2 Yearly	5 Yearly	Certificates	Regime	
Cleaning										N/A	The areas to be cleaned are the inside of the car, the landing doors and door frames, push- buttons and indicator plates and the car and landing door sills.	





# Schindler 3100/3300/6300 Owner's Manual January 2019



This is the released English version.

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# 1 About this Document

Periodic Inspection
Inspections must be carried out according to the national regulations. If there are no specific regulations, the owner of the installation must ensure that periodic inspections must be carried out by a competent person according to the instructions given by the installer.

# 1.1 Safety, Symbols and Definitions

The following types of safety warnings are used in the present manual.

<b>DANGER</b>	The safety warning with the signal word "Danger" is used to indicate a hazardous situation which, if not avoided, will result in death or serious injury.
	The safety warning with the signal word "Warning" is used to indicate a hazardous situation which, if not avoided, could result in death or serious injury.
	The safety warning with the signal word "Caution" - in combination with the safety alert symbol - is used to indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	The safety warning with the signal word "Notice" is used to address practices that could result in property damage but not in injury.
Competent Persons	Person, suitably trained, qualified by knowledge and practical experience, provided with necessary instructions to safely carry out the required operations for maintaining or inspecting the lift, or rescuing users.
Emergency	A situation in which passengers are trapped in the car.
Authorized Person	Person with the permission of the natural or legal person who has the responsibility for the operation and use of the elevator, to access restricted areas (machinery spaces, pulley rooms and lift well) for maintenance, inspection or rescue operations.
Fault	A state of operation in which safe operation of the elevator for its intended purpose is restricted or impossible.
Handover of the Installation	The point in time at which the installer makes the elevator available to the user for the first time.
Installation	Completely installed passenger elevator or goods passenger elevator or accessible goods only elevator.
Installer	Natural or legal person who takes responsibility for the design, manufacture, installation, commissioning and placing on the market of elevators.

Maintenance Company	A company which is given responsibility for carrying out maintenance work, and which has competent persons at its disposal.
Notified Body	An independent body with elevator experience, professional integrity and technical competence, appointed by the EC-Member-States.
OEM	Original Equipment Manufacturer (for elevators or components)
Owner of the Installation	The natural or legal person who has the power of disposal of the installation and who is responsible for its operation, the intended use and that the installation is maintained.
Competent Person	Persons authorized by the owner of the installation, who have been competent by the maintenance company to perform specific tasks allotted to them.
Maintenance Operations	All work necessary for preventive maintenance, correction of faults, and repairs.
Preventive Maintenance	All measures which are necessary to ensure safe and correct operation of the elevator.
Repair	Replacement or repair of defective and/or worn components.
Safety Components	Elevator components are specified in Lift Directive 2014/33/EU.
	1.2 Duties of the Owner
Intended Use	The owner of the installation is responsible for ensuring that the installation is used as intended (transport of passengers). He is also responsible for ensuring that the installation is maintained in a safe operating condition.
Availability of the Instruction Manual	The owner of the installation is responsible for ensuring that this manual is available at all times and freely accessible to competent and to competent persons.
	<b>Periodic inspections</b> Inspections must be carried out according to the national regulations.
	If there are no specific regulations, the owner of the installation must ensure that periodic inspections must be carried out by a competent person according to the instructions given by the installer.

Returning to Normal Operation	<ul> <li>If the elevator has been commissioned, but used as a building elevator, or if it has been taken out of service for an extended period of time, the following work must be carried out by a competent person before the installation is put back into normal operation:</li> <li>Clean and lubricate the installation.</li> <li>Replace damaged components.</li> <li>Check the safety elements.</li> </ul>
Maintenance Obligations	The installation described here conforms to Schindler quality standards. It was built in accordance with the state of the art and the recognized safety regulations. In order to ensure safe operation after handover, the installation must be regularly maintained by competent persons.
Safety Components	Ensuring that all safety components are kept in safe operating condition. In order to ensure safe operation, the safety components must be regularly maintained by competent persons.
New Lifts Directive	The new lifts directive (Directive 2014/33/EU) will be transposed into the national law of the member states of the European Union, Iceland, Lichtenstein and Norway (based on their participation in the European Economic Area), Switzerland (based on a mutual recognition agreement with the EU) and Turkey (based on a customs union with the EU) as of 20 April 2016, and will replace the national legislation based on the current lifts directive (Directive 95/16/EC) as of this date.
	This means that all lifts that are placed on the market as of 20 April 2016 must comply with the requirements of the new lifts directive. Lifts that have been placed on the market before 20 April 2016 and that are in conformity with the current lifts directive (Directive 95/16/EC) may however still be put into service after this date.
	One of the main changes introduced with the new lifts directive is the requirement to ensure the traceability of safety components for lifts throughout the entire supply chain.
	To meet the legal requirements, all safety components for lifts manufactured and/or supplied by Schindler will be labelled with a standard type label that among other information includes one or several of the following items: Ident, serial and batch number, name and address of the manufacturer and importer of the safety component for lifts, as well as a traceability tag (QR-Tag) for Schindler internal purposes.
Standard Schindler Type Label	For standard Schindler type label, refer to section "Safety Components".
Handling of Emergencies	When the handling of alarms is the responsibility of the owner of the installation, the following has to be considered: In the case of an emergency where there is no response from the car, it must be assumed that the person in the car pressing the alarm button has impaired speech or hearing. This requires immediate intervention by a competent person.
Restricted Access	Only competent persons are permitted to enter the machine room and hoistway. Building maintenance and/or cleaning work in the machine room or in the hoistway must be carried out only by competent persons or in the presence of a competent person. Prior to such work, all safety measures and precautions must be in place.
Safety Precautions	Doors giving access to the machine room and hoistway for maintenance must be kept locked at all times. It must, however, be possible to open the doors from the inside without a key. Access routes to the machine room and hoistway must be easy and safe to pass

	through at all times. If one or more of the access routes are blocked, the installation must be taken out of service.
	<b>Notification to the Maintenance Company</b> If irregularities in the installation are observed - (for example, leveling, noises, vibrations, defective car lighting, start with a jerk, etc.) - the maintenance company must be notified immediately.
	The owner of the installation must also notify the maintenance company of any changes that are imminent in the area of the installation, and whenever an emergency has occurred.
Access to Building and Installation	For emergencies, and to carry out maintenance operations, safe access to the building and to the installation must be guaranteed at all times. The access to the control and the drive must be locked. The machine room key may only be made available to persons authorized by the owner.
Maintenance Operations	The owner of the installation must fulfill the requirements as laid down in the chapter "Maintenance Information and Instructions".
	<b>Notification by the Owner of the Installation</b> According to the product liability laws, the installer must also keep track of its installations even after commissioning and handover.
	Therefore, damage to the installation or possible dangerous conditions must also be reported to the installer by the owner of the installation.
Lighting	Adequate lighting of the machine room, hoistway and access routes must be guaranteed at all times.
Temperature and Ventilation	The owner of the installation must ensure that the temperature in the machine room and in the hoistway is maintained between + 5 $^{\circ}$ C and + 40 $^{\circ}$ C. The machine room and the hoistway must be adequately ventilated. The machine room and the hoistway may not be used for ventilating spaces which are not associated with the installation.
Lubricants and Oils	Only the lubricants and oils (gear oil) listed in the maintenance manual may be used. The use of other lubricants can effect safety and cause extensive damage requiring costly repairs.
Disposal	Used lubricants and oils must be taken back by the maintenance company and disposed of in accordance with the legal requirements. Lubricants and in particular motor and hydraulic oils belong to the classes of materials causing dangerous water pollution. Lead accumulators and batteries containing lead have to be transported to the local Schindler company for an adequate disposal.
Utilization of Hoistway	The hoistway may not be used for other purpose than the elevator installation. It is not permitted to have equipment present which does not belong to the installation.

Replacement of Safety Components	If safety components are replaced, only original spare parts with a corresponding declaration of conformity, may be used. Parts which have been copied, modified, or subsequently reworked, can put the safe operation of the installation at risk, reduce the specified lifetime or may result in dangerous operating conditions.
Replacement of Other Components	Parts and accessories have been specially designed for this elevator. We draw specific attention to the fact that components and accessories supplied by third parties have not been tested or approved by the installer. Installing or using such products (or installing used components), can have a negative effect on characteristics resulting from the design (such as lifetime, operational safety, ride comfort) and can be dangerous.
Use only Original Parts	The manufacturer draws specific attention to the fact that parts and accessories supplied by third parties have not been tested or approved by the manufacturer. Installing such parts, or installing used or modified parts can be dangerous.
	<b>NON-original parts</b> can have a negative effect on characteristics such as operational safety and lifetime, as well as ride comfort due to differences in design.
Liability	Neither the manufacturer nor the installer can be held liable by the owner of the installation for any damage which occurs as a result of using non original spare parts, modified parts or used parts which have not been tested by the installer.
Availability of Parts	Schindler guarantees the availability of original parts for 20 and 10 years for electro- mechanical parts and electronic parts respectively.
Handling of Emergencies	When the handling of alarms is the responsibility of the owner of the installation, the following has to be considered: In the case of an emergency where there is no response from the car, it must be assumed that the person in the car pressing the alarm button has impaired speech or hearing. This requires immediate intervention by a competent person.
	1.3 Recommendations to the Owner
	Reducing owner liability by increasing the safety level of users and the ongoing reliability of the installation.
Scope	The owner of an installation has the duty to warrant the safety of users (passengers and maintenance professionals) and the reliability of the installation as well as his own liability by considering the following rules based on the European Standard "EN 13015 Maintenance for elevators and escalators - Rules for maintenance instructions".
Selected Rules	
•	Numbers in brackets refer to the relevant clauses of EN13015
	Maintenance (3.1) includes all the necessary operations to ensure the safe and intended functioning of the installation and its components after the completion of the installation and throughout its life cycle.
	Only correct and preventative maintenance performed by a maintenance organization (3.2) where competent maintenance persons (3.3) are carrying out maintenance

operations on behalf of the owner of the installation (3.7) in conformity with the maintenance instructions can ensure the safe and intended functioning of an installation. The owner shall use a maintenance organization that complies with the requirements of EN13015.

It is recommended to inform the owner of the installation about the need to use a maintenance organization with adequate and proper insurance coverage provided by an insurance company (4.3.2.1, Note).

The installation shall be maintained in good working order in accordance with the installer's instructions. To this effect, regular maintenance of the installation shall be carried out, to ensure the safety of users and reliability of the installation (4.1).

At the latest when the installation is put into service or if the installation is to remain unused for a long period of time before first being put into service (4.3.2.3) regular maintenance shall be carried out by a maintenance organization.

The owner of the installation shall provide to the maintenance organization the relevant maintenance instructions when modifications were carried out on the installation (4.3.3.2 Note).

The maintenance company carries out periodic maintenance determining the frequency of maintenance interventions (4.3.3.9) by taking into account the following non-exhaustive list of criteria:

- number of trips per year, operating time and any non operating periods of time
- age and condition of the installation
- location and type of building in which the installation is installed, as well as the needs
  of the users and/or the kind of goods transported
- local environment where the installation is situated, as well as external environmental elements, e.g. weather conditions (rain, heat, cold etc.) or vandalism.

Based on such criteria the maintenance company shall work out a maintenance plan (4.3.3.5) to ensure that preventive maintenance is suitable for the installation and maintenance time is optimized, without reducing the safety of persons and without increasing the non operational time of the installation.

The maintenance company shall be able to provide the necessary spare parts for repair (4.3.3.13).

The maintenance company has the duty to inform the owner of the installation in due time about necessary upgrading of the installation (4.3.3.15).

If the lift has been designed to EN 81 - 77: 2013 (Lift subject to seismic conditions), the competent person must be ensure relevant checks listed in section 4.8 Maintenance Plan - Guideline are carried out.

After an earthquake a full check of the whole shaft situation regarding deformation or damage, fallen debris must be before placing the lift back into service.

# 1.4 Periodic Checks by the Owner

Periodic Checks by<br/>the OwnerIn addition<br/>the mainter

In addition to those examinations and tests which the owner of the installation entrusts to the maintenance organization, the owner needs to carry out the following checks periodically:

- correct functioning of landing doors and landing door tracks
- stopping accuracy
- correct functioning of indicators
- landing push buttons
- car push buttons
- two-way means of communication in the car which provide permanent contact with a rescue service
- normal car light
- door reversal devices
- safety signs / pictograms

# **2** Basic Information for the Customer

	2.1 Acknowledgement of Customer Documentation	
Identification of the	Elevator No:	
Elevator Installation	Address:	
	Installation location:	
	Country:	
	Year of installation:	
Owner	Name:	
	Street:	
	Zip Code:	
	City / Country:	
Confirmation of	We confirm herewith the receipt of the Owner's Documentation by the owner.	
Receipt	The documentation consists of	
	$\square$ Declaration of conformity	
	$\square$ Basic characteristics of the elevator	
	Plans of elevator in the building (layout drawing)	
	Electrical schematics of the safety and main power circuit	
	$\square$ List of safety components	
	$\square$ Basic characteristics of traction media	
	$\square$ General maintenance instructions for the elevator	
	$\square$ Table of lubricants, oils and greases	
	$\square$ Maintenance instructions for safety components	
	$\square$ Instructions for normal use of the elevator	
	$\square$ Rescue operations instructions	
	In the case where the building/elevator is used by other persons, or if the ownership of	
	the building changes, the Owner Documentation has to be passed on.	
Signature		
-	Place / Date:	
	Signature of the owner:	
	Signature of the installer:	

# 2.2 Logbook

Description of the Elevator	Electric gearless drive withou	: machine room.	
Installation	Туре:		
	Installation No.:		
	Location of elevator:		
	Address:		
	Owner:		
Put into Service			
	Date:		
	Observation:		
Maintenance	Name		
Company	Address:		
	Citv:	Country:	
	Telephone:	Fax:	
	Start date for maintenance		

Major Repairs / Important Modifications	Description	Date	Name and Signature

# 2.3 Basic Characteristics of the Installation

Identification of the Elevator	Traction elevator without machine room
Owner Data	0
	Owner:
	Address:
Installer	Name:
Installation	Installation No.:
	Address:
	Layout drawing ref. no.:
Characteristics of	Number of levels served:
	Car entrances:
	Rated load:
	Number of persons:
	Type (passenger, passenger goods, goods only):
	Max. starts per hour:
	Travel (mm):
	Rated speed:
	Voltage (V):
	Power supply: Number of phases
	Power supply: Number of wires
	Frequency: 50 Hz
	Power (Kw):
	Type of control: BIONIC microprocessor
	Suspension:
	Number of traction media:
	Car safety gear type:
	Safety gear on counterweight:
Machine Positioning	Machine located inside the hoistway fixed on guide rail.
Type of Drive	Gearless machine with closed loop.

# 2.4 Removing the Elevator out of Service for some Time

If the elevator has been commissioned, but used as a building elevator, or if it has been taken out of service for an extended period of time, the following work must be carried out by a competent person before the installation is put back into normal operation:

- Clean and lubricate the installation
- Replace damaged components
- Check and test the safety components

If the elevator is going to be switched off for periods greater than a month (guideline):

- Disconnect any emergency or back-up batteries
- Check manual evacuation procedure

If the elevator is to be switched off for longer periods, the following actions must be considered:

- If there is power available: At least once a month the elevator must be moved under it's own power for a few minutes throughout the whole hoistway.
- If there is no power, then the car and counterweight should ideally be suspended and the weight taken off the machine.

# 2.5 Notification to the Installer

Purpose	According to the product liability laws, Scl installation(s) even after commissioning a informed about any possible existence of changes in ownership should be commun	hindler as manufacturer must keep track of its nd handover. Therefore Schindler must be dangerous conditions in the installation. Also licated to Schindler.
Installation	Schindler Elevator I td :	
Company	Street:	
	Zin Code:	
		Country
	City.	Country.
		Γαλ.
Identification of the Elevator Installation	Comm. No.:	
	Elevator No.:	
	Address:	
	Installation location:	
	Country:	
	Year of installation:	
Owner	Name	
	Street:	
	Zin Code:	
		Country
	City.	Country.
		Fax:
Change of Ownership	Date:	
New Owner of the Installation	Name:	
inotaliation	Street:	
	Zip Code:	
	City:	Country:
	Telephone:	Fax:
Description of Fault or Dangerous Condition		
Signature of Owner of the Installation	Date:	Signature of the owner of the installation:

# 2.6 Declaration of Conformity

**CE** EC Declaration of Conformity for an Installation

Name of installer: Address of installer: Product type: Commission No.: (Serial No.): Year of installation: Location of installation:

We herewith declare that this product meets the following EC Directives and EN standards:

Lifts Directive 2014/33/EU Machinery Directive 2006/42/EC Standards: EN 81-1:1998 +A3:2009 EN 81-28 (edition June 2003) EN 81-70 (2003+A1:2004) EN 81-73 (2005) EN 81-73 (2016) EN 349 (edition April 1993) EN 81-21 (2009+A1:2012) EN 81-20 (2014) EN 81-50 (2014) EN 81-77 (2013) - Category 0 / 1 / 2 EN 81-21:2018

Has undergone final inspection or the installer quality system has been checked by:Name, address,reference No. of thenotified body:Id. Nr.- Cert.Nr.

Application: For transport of passengers and goods according to the data plate in the car and the instruction manual.

Place: Date: Company / Department: Last name / First name: Signature:

# 3 Instruction for Use

# 3.1 Purpose and Scope

Scope	The EU Lift Directive 2014/33/EU describes the basic requirement relating to safety and health with which elevators and their safety components must comply without reservation. These include the requirement that the installer must deliver an instruction manual with every elevator he installs.
Safety Symbols and Definitions	To ensure correct understanding of the instruction manual, the safety symbols and definitions described in the section "Safety Symbols and Definitions" must be observed.
Purpose of the Instruction Manual	The instruction manual gives the owner of the installation, the maintenance company and the competent person important instructions for safe operation of the elevator, elevator maintenance and for taking appropriate measures if emergencies occur.
Binding Nature	This instruction manual relates to the elevator specified on the first page. At the handover of the installation the instruction manual becomes binding on the owner.

### Intended Use



The elevator described here is intended for the transport of passengers. Signs displayed on the installation must be observed. If the installation is used for the transport of goods, the following points must be taken into consideration.



#### Allowable load:

Loading the car above the maximum allowed weight in the car is forbidden. Always consider the weight of the person being transported.



#### Load distribution:

The load must be evenly distributed over the car floor. A single heavy load being brought into the car all at once can cause damage to the car.



[38966; 22.03.2011]

Number of Trips per Hour The installation has been designed according to the use of the building specified at the time of purchase. The corresponding number of trips per hour is shown in the sales specification of the installation. If the use exceeds this specification, excessive heat can cause the elevator to become blocked. If this happens frequently, the installation must be inspected and, if necessary, modified. In this case, the installer must be contacted.
If the elevator is used outside the scope of the foregoing definitions, it is no longer being used for its intended purpose. Neither the manufacturer nor the installer accepts liability for damage resulting from such use. Use of the elevator as intended includes complying with the conditions for maintenance specified by the manufacturer or the installer.
Elevator Documentation The instruction manual forms an integral part of the elevator.
Any modifications, which affect the functioning of the elevator, must be entered in the elevator documents.

# 3.2 Description of the Installation



Overview [40843; 24.03.2015]

**Control Cabinet** 

The control cabinet (4) located at the closing side door jamb of the top floor contains the controller and the emergency device, as well as the rescue instructions.

**Power Transmission** 

**on** Monitored by the controller, the motor (7) drives the traction sheave (8), which transmits the force to the car (11) by the suspension media (14) and counterweight (1).

Safety Components	The safety gear (13) on the car stops the car (11) if it travels downward at excessive speed. The safety gear (13) is tripped by the overspeed governor (9). The safety gear (15) (optional) on the counterweight, if provided (see characteristics), stops the counterweight if it travels downward at excessive speed. The brake (6) on the motor stops the car if any of the safety switches activate, and also holds the car while stationary. The buffers (17) stop the car (11) or the counterweight (1) in the event of over travel into the hoistway pit. The door interlock (16) prevents the landing doors (2) from opening during travel and when the car is outside the door interlocking zone. The car door (5) protects the car entrance during travel and when outside the floors.
Safety Chain	The safety chain monitors all electrical safety elements.
TSD (Temporary Safety Device) Option	When the lever (10) is engaged, the safety pins (3) extend from the base of the car. The safety bracket (12) limits the available car movement on the top and/or bottom of the hoistway, in a way to provide sufficient safety space in the case of a reduced headroom and/or reduced pit option.
Standard Control Functions	<ul> <li>Pick up control The control registers only one call from the car, which is executed in direct travel. Landing calls are registered and served according to their input sequence, once the car is free.</li> <li>Down collective control At any time the control registers calls from the landings and calls from the car. As the car travels down, it serves the calls in their natural sequence. The landing calls are only served in downward direction (upward for basement).</li> <li>Collective selective control At any time the control registers up and down calls from the landings, and calls from the car. As the car travels either downwards or upwards it serves car calls in their natural sequence and landing calls of same direction.</li> <li>Group control Group control combines two or more elevators into a single control system. This optimizes the distribution of the landing calls between the elevators.</li> <li>Overload control The overload control prevents travel with an overloaded car. The car remains at the landing with the door open. An acoustic and optical signal draws the passenger's attention.</li> <li>Full load control (only for collective) When the car is full, it will only serve car calls, landing calls are ignored or allocated to the other elevator if duplex.</li> </ul>
Control Options	<ul> <li>Depending on configuration of the specific installation, additional control options may be present. These are detailed in characteristics and sales specifications of the installation.</li> <li>Fireman's control (according to local/national regulation for example, EN 81-73)</li> <li>The fire emergency control immediately brings the car (or cars) to the recall floor, where the car(s) open the door(s) for maximum 20 s and remain(s) blocked with closed/open door depending on local/national regulation. The lift does not respond to car calls and landing calls, door open button remains active.</li> </ul>

The fireman's control is turned on or off either:

- by the fire emergency key switch, located on main floor (JBF)

- by the fire emergency key switch, located on main floor or fire detection contact (JBF + KBF)
- by the fire emergency key switch, located on main floor with alternative key on defined floor in case of fire in main floor (**KBFH1**).

## Fire emergency controls BR2 / BR3

BR2/BR3 control allows the elevator (or one of the elevators if duplex) to be used by the fire brigade to make trips for fire fighting purposes. When the fire fighting switch is activated, the elevator travels immediately to the fire recall floor, and opens its doors. Then use of the car is reserved for the firemen. In the case of a duplex and BR2 the other elevator remains in normal service. In the case of duplex and BR3, the other elevator remains at the fire recall floor. Fire fighting service can only be deactivated when car is at fire recall floor with doors fully open.

- Fire emergency key switch, located on main floor (BR2).
- Fire emergency key switch, located in the car (BR3).
- Automatic evacuation to the nearest floor (option on elevator control) In case of power failure, an evacuation travel is initiated in up or down direction, depending on the load in the car. When the car arrives at the nearest floor, the doors open and remain open.
- Independent control (car reservation)
   When the car reservation key is turned on, the car is reserved for exclusive use such as car interior cleaning or loading. Landing calls are ignored (allocated to the other elevator if duplex).

Out of service function
 The out of service switch is used to take one elevator out of service. Currently
 registered car calls are served before the car returns to a specified recall floor, where
 it's blocked after the doors have opened and closed. Further travel indicator for
 collective controls and car position indicators on the landings are de activated.

- Floor lighting control
- Destination landing light automatically switches on when elevator arrives to the floor.
- Pre opening doors
  - The door opens just before the car comes to a stop at landing in order to save time.
- Pre announcing arrows with / without acoustic signal (Collective control)
   The indication to the passengers for the direction in which a car will travel next, using up or down arrows.
- Automatic car light

When the car is not used for a period of time with door closed, the light is switched off.

Automatic return to main floor from all floors

The car is automatically sent to the main floor after a time of inactivity (default 2 min.). There it remains with door closed.

- Automatic return to main floor when car stands below the main floor
   The car is automatically sent to the main floor after 5 s. of inactivity below the main floor. There it remains with door closed.
- Voice announcement (selected languages)
   The specific device located on the car generates audible synthetic messages:
  - Floor position of the car
- Penthouse option
   In case the elevator gives direct access to the top apartment in a building, the control box can be installed on the floor immediately below the top one.
- Guest control (option)

Visitors control is an option linked with the "Penthouse option". When a penthouse's visitor dials the top floor on the COP, the landing button at the penthouse floor makes an intermittent acoustic signal and a visual signal blinks.

During the announcement time, pushing the UP button (on the penthouse's LOP) initiates a direct travel to the concerned floor and the acoustic announcement is shut OFF (the visual signalization is ON until the car arrives to the visitor floor).

During any fire fighter service, the COP can be used as if without visitor control. The DOWN button serves as normal landing call.

#### Restrictions

Visitors control is limited to simplex elevators with the landing buttons or basic pick up control algorithm.

An intercom system, video camera or similar is needed to allow the identification of the visitor by the penthouse's occupant.

To grant access to the occupant to his apartment, this service has to be combined with one of the following services:

- Key switch on COP
- Personal Access System (Schindler card)

#### LiftKey

The scope of this system is to authorize the access to restricted areas in a sure and simple way, or to select a floor without pushing any button.

Each passenger using this function shall have a transponder (Schindler or customer card) with its own identification code.

When the transponder is put near the COP, an identification code is transmitted to the COP. The corresponding car call is registered, or, if several car calls are possible, the passenger is asked to select one of them (see sequence below).

If several car calls are assigned to the identification code, and the passenger select a car call not included in its assignment list, the car call is treated as a normal car call:

- If the floor is not protected, the car call is registered
- If the floor is protected by a PIN code, the PIN code is requested ("CO",...)
- If the floor is protected, the car call is not registered.

The car call is treated as a normal car call, even in case the floor is protected (overrides the lock).

When a car call is not accepted, the acknowledge display give the following message: 3 x blinking "- -" + beep.

### Emergency power operation

After the automatic evacuation to the nearest floor in case of power failure is done, one or more elevators are released for public use.

# - Building Management Interface

The building Management Interface provides external information of the status of the elevator via dry contacts or via lobby vision PC. The interface allows external operation of emergency power controls by the building management.

 EN81-70 "Accessibility to elevators for persons with disability" Possibility to fulfill EN81-70 rule.

#### Door lock monitoring (PUBEL)

Each landing door on the floor landing shall be equipped with an electrical safety device which shall control door closure.

#### Distribution of free cars

During periods with little traffic, free cars (empty cars with no calls registered) are distributed over the building to preset floor zones improving response times.

#### - Selective door opening

To independently control the entrance or prevention of a through opening respectively in case of elevators with two car entrances.

#### - Earthquake control

In case the "seismic switch of the building is activated all elevators of the group stop at the next possible landing. The affected elevator(s) are blocked persistent and open the doors for a pre configured time.

### Sabbath control

During Sabbath it is not permitted a passenger operates an electrically powered device (e.g., push buttons, contacts, photocells) directly or indirectly. An elevator under Sabbath operation travels automatically and continuously up and down the building to a predefined floors without any activation of the normal user interfaces (call buttons). It stops at predefined landings on each travel direction, opens and closes automatically the doors and continues the trip to the next predefined landing.

## 3.2.1 Control Elements in the Car Schindler 3100/3300/6300

**Car Operating Panel** Pick-up and collective control:



COP [41853; 17.03.2017]

Includes:

- Travel command keyboard (6). It is used to select the destination floor. As soon as a key pad (with Braille identification) is touched, a local short beep is generated and the destination floor is displayed on the lower indicator (5) to acknowledge. Floors below the 0 level must be preceded with the minus (-) key pad. Two digit numbers must be entered for floors above level 9.
- The door open button (7) is used to hold the door open or to reopen a closing door.
- The door close button (2) is used to close the door immediately.
- The alarm button (1), when touched, allows a permanent two-way voice communication with a rescue service.
- Position indicator (3). It displays the actual position of the car.
- Pre-announcing arrows (4). Indicate for collective and selective controls further car travel up or down (direction arrows indicate for pick-up control the direction the car is currently traveling).
- Overload indicator (5). When the function is activated, a beep is generated, a flashing "OL" indication is shown on the main display (3) and an overload pictogram is displayed on (5).
#### Optional Control Elements in the Car

- Key switches for diverse control options, installed into a key module on the COP:
- Mechanical COP (8) with push buttons
  - Full height COP standard (8A) or if with PORT (8B)



[40700160\_001; 17.03.2017]

- **Destination floor indicator.** It displays the next floor destination in the case of collective selective control.
- Protected car call (PIN code). The pin code is used to enable a protected destination floor previously entered.
- Floor access protection on COP with Schindler card or additional key under the COP (not shown on the picture).
- Out of service indicator.
- Configurable COP (sensitive) with n-push buttons. (Push buttons only for served floors).

Operational Features for Handicapped

- Braille on landing call button.
- Additional identical car operating panel.
- European Norm EN81-70.

Car Emergency Light



- 1 Short COP
- 2 Emergency light in short COP
- 3 Glass panel
- 4 Emergency light in long COP
- 5 Long COP

For long COP (5), emergency light (4) is behind the glass panel (3).

# 3.2.2 Control Elements on the Landings Schindler 3100/3300/6300

Landing Call Sensitive Button The landing call button is used to call a car.



[39321; 21.08.2013]

After entering a call, the landing call button lights up as an acknowledgement. If this does not happen, the elevator is not available.

The operating panel includes up and down buttons for collective selective control (optionally at main floor for collective control).

Optionally, the landing call buttons can be controlled with a key (detached).

#### Landing Call Push Button

Includes:

- Landing call
- Also available Schindler 3100 indicator type (See 3.2.4).



[39323; 21.08.2013]

# Indicator



[39324; 23.09.2015]

## Includes:

- Direction arrows (pick-up)
- Pre-announcing arrows (collective/selective)
- with / without acoustic signal
- Car position
- Bell light (MDM236 Italy)
- Voltage-free contract to switch on lighting (optional)
- Also available Schindler 3100 indicator type (See 3.2.4).

Operational Features for Handicapped - Braille on landing call button.

# 3.2.3 Guide to Safe Operation of the Installation

Assistance Persons who are unable to use the controls in the car may only use the elevator if accompanied by a person able to assist.

**Behavior of User** Passengers must stand still while the car is moving. Jumping or rocking is not allowed. Instructions in the car must be followed.



Passenger Behavior [38963; 22.03.2011]

The elevator may only be used if the car lighting is on.



Car Lighting [38964; 22.03.2011]

Do not throw objects, especially burning matches or cigarettes, through the gap between the door and the landing sill into the hoistway pit. This may cause a fire and dangerous smoke.



Positioning of Goods Goods being transported in the car must be positioned in such a way that they cannot move about. Care must be taken to evenly distribute the load.



Positioning of Goods [38966; 22.03.2011]

# Exceptional Situations

A DANGER	Fire, Smoke, Water in the Building
	$\overbrace{[38968; 22.03.2011]} \overbrace{[38968; 22.03.2011]}$ In case of fire the car could come to a stop, due to power failure or other fire damage, in a position where it becomes impossible for passengers to leave the car so that danger of burns and/or suffocation could occur.
NOTICE	Handover of Emergency Keys The installer must hand over the emergency unlocking keys for landing doors and control cabinet to the owner of the installation. The handover must be accompanied by written instructions detailing the essential precautions to be taken in order to avoid possible accidents, resulting from unlocking, or access to cabinet. Instructions how to use keys.
	<b>Use of Emergency Unlocking Key</b> The use of emergency unlocking key for landing doors and control cabinet key is strictly limited to competent and maintenance persons.
Caring for the Disabled	
NOTICE	<b>Disabled Persons</b> If disabled persons predominantly use an installation, the installer of the maintenance company must be contacted to provide adequate modifications to the installation.
	<ul> <li>The following measures must be taken to serve disabled persons:</li> <li>Door opening and closing times are to be adjusted.</li> <li>Special operating panels must be installed in the car.</li> </ul>

# 3.3 EN81 - 28: Remote Alarm on Passenger and Goods Passenger Elevators

# 3.3.1 Emergency Rescue Service

	CHI P CARD CCS CCS CHI P CARD SK T2 T3 T4 T5 T6 DUELSKA DUELSKA Schlindler
	LIF T ID COM CANL MOF D LIF CANL CA
Terms and Definitions	For the purposes of this European Standard, the terms and definitions given in EN81-20:2014 and EN 1070:1998 apply.
Acknowledgement	Information issued by the rescue service destined for the alarm equipment in order to inform it that the alarm has been taken into account.
Alarm Equipment	Part of the alarm system able to detect, identify and validate as true alarm and initiate a 2-way communication. The alarm equipment is part of the elevator.
End of Alarm	Information issued by the alarm system and destined for the rescue service in order to inform it that the entrapment situation has ended.
Alarm Initiation Device	Device(s) intended for users trapped in the installation in order to call for external assistance.
Alarm System	Combination of alarm initiation device(s) and alarm equipment(s).
Human Response	Response performed directly by a person of the rescue service via the alarm system.
Reception Equipment	Equipment outside of the elevator (e.g. at the rescue service) capable of handling alarm information and 2-way communication.
Rescue Service	Organization in charge of receiving alarms information and rescuing users trapped in the installation.
Transmitter	Part of a 2-way communication between the alarm system and the reception equipment.
	The emergency rescues service must be available for contact at all times and its personnel have been appropriately trained so as to be able to take competent action. The functioning of the communication facility with the emergency rescues service must be guaranteed during the entire lifetime of the installation. A competent person must

always be within easy reach in case of emergencies with passengers trapped in the elevator.

	3.3.2 Emergency Rescue Procedure
Emergency Rescues Situation	If for any reason the car stops, and it is not possible to leave the car in the normal way, there is no danger to users in the car. The car is secured against uncontrolled movements. Ventilation slits allow air into the car. If the power supply fails, emergency lighting will immediately provide light inside the car.
2-Way Communications System	The car is equipped with a 2-way voice communication system, which can be used in an emergency to set up communication with a rescue service. The alarm button in the car should only be pressed in an emergency. When the alarm button is pressed, the alarm is passed on automatically. After a short time, the person on duty at the responsible service center replies. The person gives instructions to the user, and organizes whatever action is necessary.
Information for the Owner of the Installation	<ul> <li>The need for the owner of the installation to assure that the elevator is connected to a rescue service.</li> <li>Information that has to be passed over to the rescue service.</li> </ul>
	<ul> <li>The need to keep the alarm equipment in working conditions at all times to provide 2-way communication with a rescue service.</li> </ul>
	<ul> <li>The need to remove the installation from service when the 2-way communication is out of order.</li> </ul>
	<ul> <li>Periodical checking of the voice response coming from the rescue service, by using the alarm initiation device(s).</li> </ul>
	<ul> <li>Information for use of alarm systems.</li> </ul>
	<ul> <li>The minimum maintenance requirements for the alarm system.</li> <li>Information about how to change dialing parameters e.g. telephone numbers where they are included in the alarm equipment.</li> </ul>
Information for the	The owner of the installation shall inform the rescue service about the following:
Rescue Service	<ul> <li>Periodic and automatic checks.</li> </ul>
	<ul> <li>Address originating the alarm, including location of the elevator.</li> </ul>
	<ul> <li>Building organization including necessary availability of the rescue service, e.g. in each 24 h period.</li> </ul>
	<ul> <li>Description of means to gain access to the trapped user(s).</li> </ul>
	<ul> <li>Any special risks related to entering the building and obtaining access to the installation.</li> </ul>
	<ul> <li>The need to ensure compatibility between equipment to enable fully and correctly receiving and identifying the alarm(s) before the acknowledgement is sent to the alarm equipment.</li> </ul>
	<ul> <li>The general instructions information of the installer taking also into account the requirements of this standard.</li> </ul>
	<ul> <li>The need to establish at all time 2-way communication enabling contact with trapped users including the ability to speak regularly with them and to inform them about the status of the rescue operation.</li> </ul>
	– Inform about the limits in time of the emergency power supply to the alarm system.
	<ul> <li>Periodic and automatic checks.</li> </ul>
i	The owner of the installation can ask for human response in a more specific language(s) in addition to the official language(s) (see EN 81-28: 2018, 5.3 - EN 81-20:2014, 0.4.2).

# 3.4 Short Customer Configuration Guide

# 3.4.1 ETMA (Embedded Telemonitoring Alarm)

**Overview** ETMA stands for embedded telemonitoring and telealarming, meaning that the ETMA system features a telemonitoring and telealarming capability integrated in a single platform.

- The telealarming function provides alarming and voice communication with TeleAlarm Control Center (or any other point of assistance) to the occupants of the elevator car.
  - The telealarming complies with EN81-28 and EN81-70.
  - The firefighter intercom functionality complies with EN81-72.
  - In case of a power failure, the ETMA system receives emergency power either from the controller backup battery or the optional MiniUPS.
- The **basic** ETMA system consists of two ETMA modules, one in the machine room (or control cabinet) and the other one on the car roof.
- The ETMA system is hierarchical with one master and one or more slaves. The master only communicates with TeleAlarm Control Center.
- The communication within the ETMA system uses a 2-wire link, called ETMA link.
- Each ETMA module has a DC power supply.
- The ETMA system can be extended with:
  - Intercom communication, between machine room / control cabinet, car and firefighter.
  - Triphonie, voice communication for the technician on the car roof or underneath the car.
  - Inductive loop device to assist car occupants with impaired hearing.

Alarm Call

The following procedure describes a standard alarm call. Reception of the call, steps to be made for acknowledgement of the call as requested by the EN 81-28. Please take note of the fact the telephone codes need to be used as pointed out.

	Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
Establish Connection		$\leftarrow$ ring	- the TA device dials the rescue alarm number
	- the rescue service answers the incoming call		
Verify Installation ID	- ask the Installation ID with	<b>#10#</b> →	
		← #12xxxxxxxx#	- sends Installation ID (x=0 to 999999999999)
Verify Unit ID	- ask the Unit ID with	<b>#13#</b> →	
		← #15abcd#	- sends Unit ID (a=1 to 8)

	<b>Rescue Service</b>	Handling from $\rightarrow$ to	Remote Alarm Device
	- open the voice channel with	<b>#21#</b> →	- activates microphone and speaker
		←#00# <sup>1)</sup>	- sends ok
Speak	- speak with car		
	- close the voice channel with	<b>#20#</b> →	- deactivates microphone and speaker
		←#00# <sup>1)</sup>	- sends ok
Switch Lamps off	- switch lamps off in car with	<b>#28#</b> →	- switches lamps off
		← <b>#00#</b> <sup>1)</sup>	- sends ok
Acknowledge Alarm	- acknowledge the alarm with	<b>#22#</b> →	- call algorithm satisfied
		←#00# <sup>1)</sup>	- sends ok
Close Connection	- send the hang up signal	<b>#24#</b> →	
	- the rescue service	← <b>#00#</b> <sup>1)</sup>	- sends ok
	hangs up		TA device hangs up the phone line

<sup>1)</sup> If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command.

Back Ca	ll fron	n the
Rescue	Servio	ce

The following procedure describes a standard call back. Please take note of the codes needed to execute the call back.

	Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
Establish	- dial the telephone number of the TA device	$ring \to$	
Connection		$\leftarrow$ beep after 10 sec.	- the TA device answers the call
Verify Installation	- ask the Installation ID with	<b>#10#</b> →	
ID		← #12xxxxxxxxx	- sends Installation ID (x=0 to 99999999999)
Switch Unit	- select TA module with (x=1 to 8)	#16x# →	
		← beep	- switches the unit
Verify Unit ID	- ask the Unit ID with	<b>#13#</b> →	
		← #15abcd#	- sends Unit ID (a=1 to 8)
	- open the voice channel with	<b>#21#</b> →	- activates microphone and speaker
		←#00# <sup>2)</sup>	- sends ok
Speak	- speak with car		
	- close the voice channel with	<b>#20#</b> →	- deactivates microphone and speaker
		←#00# <sup>2)</sup>	- sends ok
Close Connection	- send the hang up signal	<b>#24#</b> →	
	- the rescue service hangs up	←#00# <sup>2)</sup>	- sends ok TA device hangs up the phone line

<sup>1)</sup> Optional. Necessary only when connection required to other unit than master unit. <sup>2)</sup> If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command. Watch DogThe TA device limits a call for max. 3 minutes. Afterwards the connection will be<br/>interrupted.<br/>The command below restarts the timer for next 3 minutes w/o interruption of the<br/>communication.

It can be used with each connection independent of alarm- back- or configuration call.

		Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
	Watch Dog	- start the watch dog with	<b>#23#</b> →	- The TA device starts the timer for next 3 minutes
			←#00# <sup>2)</sup>	- sends ok
	<sup>2)</sup> If the alarm commands rig	device answers with #99 ght. Try again to send the	9# then the TA device d e command.	id not get the DTMF
Automatic Periodical Call Procedure		Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
	Establish Connectio		← ring	- The TA device dials the rescue alarm number
	n	- the rescue service answers the incoming call		
	Verify	- ask the Installation ID with	#10# —	
	ID		← #12xxxxxxxxxx	- sends Installation ID (x=0 999999999999)
		- ask the Unit ID with	#13# —	•
	Verify Unit ID		← #14abcd#	- sends Unit ID (a=1 8) (b=1: test call)
	Set Line	- Set line test timer (x=0 99999 minutes)	#74xxxx#:	- sets line test timer
	lest line		←#00# <sup>2)</sup>	- sends ok
	Close	- send the hang up signal	#24# —	•
	Connectio	- the rescue service	←#00# <sup>2)</sup>	- sends ok
	n	nangs up		TA device hangs up the phone line

<sup>2)</sup> If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command.

The following procedure describes a power fail notification. Reception of the call, steps to be made for acknowledgement of the call as requested by the EN 81-28. Please take note of the fact that the telephone codes need to be used as pointed out.

	Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
Establish		← ring	- The TA device dials the rescue monitoring number
Connection	- the rescue service answers the incoming call		
Verify	- ask the Installation ID with	<b>#10#</b> →	
Installation ID		← #12xxxxxxxxx#	- sends Installation ID (x=0 999999999999)
	- ask the Unit ID with	<b>#13#</b> →	
		← #14abcd#	- sends Unit ID
			(a=1 8)
Verify Unit ID			- sends notify b = 0: notification call c = 0: all power ok
Battery			c = 1: mains power nok
			c = 2: ind/batt nok
			c = 3: all power nok
			c = 4: battery low in
			power fail
			c = 5: battery defect
Acknowledge	<ul> <li>acknowledge</li> <li>notification call</li> </ul>	#221# → ←#00#	
Close Connection	- send the hang up signal	<b>#24#</b> →	
	- the rescue service	←#00# <sup>1)</sup>	- sends ok
	hangs up		TA device hangs up the phone line

 $^{\rm 1)}$  If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command.

In case of ETMA Wireless device, below information is to the third party to reconfigure the ETMA Wireless device.

With simple SMS, the third party is able to reconfigure

- Installation ID
- Alarm numbers
- Line test number and Line test timer
- SMS numbers for notifications.

#### Configuration Installation ID and Alarm Numbers

- Send an SMS to the mobile phone number of the ETMA WL GSM with the content described below
- The ETMA WL GSM will send back a confirmation about the success of the configuration.

# SMS Configuration Content for Alarm

OEM-config	SMS of String Declaration as a Configuration for Third Party
SERNO	Header of the serial number
2345678901	Serial number of the target ETMA-MR-GSM
INSTID	Header of Installation ID
123456789012	Installation ID (maximum 12 characters long)
ANUM1	Header of the first alarm number
+4141123456	First alarm number
ANUM2	Header of the second alarm number
+4141123457	Second alarm number
ANUM3	Header of the third alarm number
+4141123458	Third alarm number
ANUM4	Header of the fourth alarm number
+4141123459	Fourth alarm number
LNUM	Header of the Line test number
+4141123459	Line test number
LTT	Header of the Line test timer
4320	Line test timer in minutes (3 days = 4320 min)
#	Declares the end of the SMS



All headers and all line endings must be present in the SMS. If there are only one or two alarm number, reuse the same phone number for the others or leave it empty.

Example of an SMS configuration content:

OEM-config SERNO 1234567890 INSTID 112123456789 ANUM1 +4100000000 ANUM2 +4100000000 ANUM3 +4100000000 ANUM4 +4100000000 LNUM +4100000000 LTT 4320 #

SMS Configuration	
Content for	
Notification	

OEM-config	SMS of String Declaration as a Configuration for Third Party
SERNO	Header of the serial number
2345678901	Serial number of the target ETMA-MR-GSM
INSTID	Header of Installation ID
12345678901	Installation ID (maximum 12 characters long)
SNUM1	Header of the first SMS number
+4179123456	First SMS number
SNUM2	Header of the second SMS number
+4179123457	Second SMS number (can be empty)
SNUM3	Header of the third SMS number
+4179123458	Third SMS number (can be empty)
SNUM4	Header of the fourth SMS number
+4179123459	Fourth SMS number (can be empty)
#	Declares the end of the SMS

All headers and all line endings must be present in the SMS.

Example of an SMS configuration content:

OEM-config SERNO 1234567890 INSTID 112123456789 SNUM1 +41790000000 SNUM2 +41790000000 SNUM3 +41790000000 SNUM4 +41790000000

#

In case the submitted serial number is matching with the one stored in the device, ETMA-MR -GSM will send back the following confirmation SMS:

OFM-config: success	// this string confirms the successful configuration
CEM comig: cuccecc	

In case the serial number is not matching ETMA-MR-GSM will send back the following reject message:

OEM-config: failed	// this string informs about the unsuccessful configuration
• = • • •	

There are some cases the ETMA will just ignore the incoming SMS and will not send any message back, in this case the configuration was not successful. The reason why ETMA-MR-GSM will not respond to every SMS is to avoid sending automatically SMS which generate additional costs.

Asking for stored configuration:

)

ETMA GSM will only answer, if it is properly configured with the SMS.

Example of an SMS configuration content:

OEM-config SERNO 1234567890 #

Return	of	Stored
Configu	ura	tion

OEM-return	
Installation ID:	123456789012
ANUM1:	+4141123456
ANUM2:	+4141123457
ANUM3:	
ANUM4:	
LNUM:	+41414567895
SNUM1:	+4179123458
SNUM2:	+4179123459
SNUM3:	+4179123460
SNUM4:	
#	

# Notification

The ETMA WL will notify only about the following events:

- Battery defect
- Battery low in power failure
- Switch off in power failure
- Passenger entrapped.

The notification of the events happens by sending an SMS to the pre-configured number(s) with following content:

OEM-notify	String Declaration as a Notification SMS
Installation ID: 123456789012	// example of a number for the SV_ID (maximum 12 characters long)
Shaft ID: 1	// example of shaft ID
Message: Battery defect	// example of a notification message
#	



A reboot of the device will reset the flags, which means that the message will be sent again if the event is still there.

The flags shall be reset in any case after 24 hours.

Recovering from Third Party Configuration	Once the ETMA WL is configured with third party, it is not possible anymore to recover to the factory state. In this case, contact the Schindler second level support.			
i	Factory reset command with DTMF or with the PTT button on the device will only reset the SMS phone numbers and as well the installation ID.			
Communication with ETMA	The communication of ETMA WL with the call center is same as done for ETMA PSTN. Refer to paragraph "Configuration Call" in section "ETMA (Embedded Telemonitoring Alarm)".			
Automatic Periodical Call Procedure		Rescue Service	Handling from $\rightarrow$ to	Remote Alarm Device
	Establish Connection		$\leftarrow$ ring	- The TA device dials the rescue alarm number
		- the rescue service answers the incoming call		
	Verify Installation ID	- ask the Installation ID with	<b>#10#</b> →	
			← #12xxxxxxxx#	- sends Installation ID (x=0 to 999999999999)
	Verify Unit ID	- ask the Unit ID with	<b>#13#</b> →	
			← #14abcd#	- sends Unit ID (a=1 to 8) (b=1: test call)
	Set Line Test Timer	- Set line test timer (x = 0 to 99999 minutes)	#74xxxxx#→	- sets line test timer
			←#00# <sup>2)</sup>	- sends ok
	Close Connection	- send the hang up signal	<b>#24#</b> →	
		- the rescue service hangs up	←#00# <sup>2)</sup>	- sends ok TA device hangs up the phone line
	· · · · ·			

 $^{2)}$  If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command.

The following procedure describes a power fail notification. Reception of the call, steps to be made for acknowledgement of the call as requested by the EN 81-28. Please take note of the fact the telephone codes need to be used as pointed out.

	<b>Rescue Service</b>	Handling from $\rightarrow$ to	Remote Alarm Device
Establish		← ring	- The TA device dials the rescue monitoring number
Connection	- the rescue service answers the incoming call		
Verify	- ask the Installation ID with	<b>#10#</b> →	
Installation ID		← #12xxxxxxxxx#	- sends Installation ID (x=0 to 999999999999)
	- ask the Unit ID with	<b>#13#</b> →	
		← #14abcd#	- sends Unit ID
			(a=1 to 8)
Verify Unit ID			- sends notify b = 0: notification call c = 0: all power ok
Battery			c = 1: mains power nok
			c = 2: ind/batt nok
			c = 3: all power nok
			c = 4: battery low in
			power fail
			c = 5: battery defect
Acknowledge	<ul> <li>acknowledge</li> <li>notification call</li> </ul>	#221# → ←#00#	
Close Connection	- send the hang up signal	<b>#24#</b> →	
	- the rescue service	←#00# <sup>1)</sup>	- sends ok
	hangs up		TA device hangs up the phone line

 $^{\rm 1)}$  If the alarm device answers with #99# then the TA device did not get the DTMF commands right. Try again to send the command.

# 3.4.2 Third Party Call Center Configuration

This information shall give to the third party to reconfigure the CUBE.

Minimum SIM requirement:

Industrial grade for high temperature

Size 2FF

Steps to follow to configure the CUBE in OEM mode

- a) CUBE power OFF
- b) Insert new SIM card
- c) CUBE power ON and reboot completed
- d) Press 1x BLE button (Bluetooth) on CUBE
- e) Send SMS configuration to CUBE
- f) CUBE is configured for OEM mode
- g) When OEM mode is activated: LED CIL4 on the CUBE will slow flash

With simple SMS, the third party is able to reconfigure

- Installation ID
- Battery status report
- SMS numbers for notifications.

The configuration message should follow the following rules to ensure proper configuration

- must start with oem-config
- must end with #
- must contain all required parameters
- must contain only key-value pairs, with one key-value pair per line and separated by a colon (:)
- must contain at least the last 10 digits of the CUBE serial number
- must not be longer than 160 characters (maximum SMS length)
- must only contain ASCII characters.

#### SMS Configuration Content for Notification (CUBE only)

oem-config	SMS of String Declaration as a Configuration for Third Party
sn:	Header of the serial number
2345678901	Serial number of the target CUBE
instid:	Header of Installation ID
12345678901	Installation ID (maximum 12 characters long)
snum1:	Header of the first SMS number
+4179123456	First SMS number
snum2:	Header of the second SMS number
+4179123457	Second SMS number (can be empty)
snum3:	Header of the third SMS number
+4179123458	Third SMS number (can be empty)
snum4:	Header of the fourth SMS number
+4179123459	Fourth SMS number (can be empty)

Inum:	Header of the battery monitoring number
+4141123459	Battery monitoring number
Itt:	Header of the battery monitoring timer
4320	Battery monitoring timer in minutes (3 days = 4320 min)
#	Declares the end of the SMS



All headers and all line endings must be present in the SMS.

Example of an SMS configuration content:

oem-config sn: 2102113374P0B4000046 instid: HK-Tower 12 snum1: +445678900 snum2: +445678901 snum3: +445678902 snum4: +445678903 #

In case the submitted serial number is matching with the one stored in the device, CUBE will send back the following confirmation SMS:

 oem-config: success

 #
 // this string confirms the successful configuration

In case the serial number is not matching CUBE will send back the following reject message:

oem-config: failed reason: [reason]	
#	// this string informs about the unsuccessful configuration

There are some cases the CUBE will just ignore the incoming SMS and will not send any message back, in this case the configuration was not successful. The reason why CUBE will not respond to every SMS is to avoid sending automatically SMS which generate additional costs.

Notification	The CUBE will notify only about the following events:			
	<ul><li>Battery defect</li><li>Battery OK</li></ul>			
	The notification of the events happens by sending an SMS to the pre-configured number(s) with following content:			
	oem-notify	String Declaration as a Notification SMS		
	instid: 123456789012	// example of a number for the SV_ID (maximum 12 characters long)		
	Message: Battery defect	// example of a notification message		
	#			
Recovering from Third Party Configuration	Once the CUBE is configu factory state. In this case,	red with third party, it is not possible anymore to recover to the contact the Schindler support.		
Comgalation	The CUBE will remain in OEM mode.			
FXS Configuration	If a 3 <sup>rd</sup> party Telealarm (ot be necessary to adjust the	her then ETMA-PSTN) is connected to the CUBE, it is might FXS interface. This can be done through a SMS messages.		
	Example SMS for Switzerland			
	fxs-config			
	country: CH			
	#			
	In case of additional information, contact the Schindler support.			

# 3.5 Rescue of Trapped Passengers

# 3.5.1 Responsibility

Only competent persons are allowed to rescue trapped passenger.

# 3.5.2 Procedure

<b>Rescuing Trapped Passengers</b> When rescuing trapped passengers, the procedure displayed in the control cabinet must be followed.
If for any reason the instruction notice in the control cabinet is missing, the maintenance company must be contacted immediately to allow them to rescue the passengers. A missing instruction notice must be replaced immediately on request of the owner of the installation by the maintenance company.
In case the car or counterweight is blocked for example, by safety gear, connect the recall control and release the unit.

1

# Handover of Emergency Key

<b>Emergency Unlocking Key</b> The use of the emergency unlocking key is strictly limited to competent persons.		
	You should inform them that the elevator car will move and that they should hold on to hand rail or car wall before the evacuation starts. The car door must be closed to prevent any risk to the passengers.	
	Turn off the Main Power Switch, JH	
DEM LUET JEM	Turn ON the Manual Evacuation Switch, JEM	
Jem Jem	Press with 3-second intervals the manual evacuation button, DEM	
LUET OFF	When the blue floor indicator LED, LUET, lights up, turn OFF the manual evacuation switch, JEM	
	Lock the control cabinet door. Go to the landing entrance adjacent to the car level. Manually open the landing door with the special triangular key: the passengers can exit the car.	
	<ul> <li>Close the landing door and ensure it is locked.</li> <li>Call the repair service!</li> <li>Ensure that landing door is locked again!</li> <li>Ensure the main power switch is turned off!</li> </ul>	



If TSD21 system, opening with triangular key will also block PEBO. First bring the elevator to the unlocking zone with PEBO, then open the door. If necessary, reset the TSD21 system by pressing DRZS.

# 3.6 Inspection and Emergency Recall Operations according EN81-20 with BIC 7

i	This section defines the teo the shaft.	chnical means w	hich needs to t	be used for safe	ly accessing
Interlocks and Priorities	<ul> <li>The goal is to prevent unsafe interaction in case more than one inspection or emergency recall operation is made active at the same time.</li> <li>The interlock and priorities are defined according EN81-20 in order that the operation from top-of-car or pit cannot be overruled by emergency recall operation.</li> <li>The interlock and priorities are defined and guaranteed by the hardware circuit design of the safety circuit and the switches and buttons of the inspection and emergency recall panels.</li> </ul>				
Operation Priorities	<ul> <li>In case the inspection a are defined as follows f</li> <li>Inspection in pit OF</li> <li>Emergency recall ir</li> <li>In case inspection top o NO movement of the ca</li> <li>The concurrent pressin inspection panel in pit a</li> </ul>	and emergency f from HIGH to LC R inspection top n machine room of car and inspec ar is allowed. Ig of up or down are supported.	recall panels ar W: of car / control cabine ction in pit are r buttons on insp	e made active, et made active at t pection panel to	the priorities he same time, p-of-car AND
Priority Decision					• • •
•	JREC	Active	Inactive	Inactive	Active
	JRESG	Inactive	Active		Active
		-	-	Active	-
	Inspection Top of Car	X	N N		<u> </u>
			X	N/	X
	Emergency Recall			X	
	No Movement	Drievity	aiaian Tahla		
		Phoney De	ecision table		
Emergency Recall Operation from outside Hoistway		ЈНМ	STOP		
	DR				
	DR		OWN	a	
			$\succ$	T INSP.	

Emergency Recall Panel ESE [604620\_034; 07.12.2015]

# Step Procedure

- **1** Activation:
  - Press JHM
  - Switch JRH to "Inspection"
  - Release JHM only if JRH has been switched to "Inspection"
- 2 Operation:
  - Press and hold DRH\_U to move the car upwards
  - Press and hold DRH\_D to move the car downwards
  - Release DRH\_U or DRH\_D to stop the car movement
  - Press JHM to stop the car movement
- 3 Deactivation:
  - Switch JRH to "Normal"
  - Check that JHM is not pressed

Inspection Operation at Top of Car without TSD21



Inspection Panel Top of Car REC without TSD21 [604620\_035; 07.12.2015]

Step	Procedure		
1	Preparation for entering car roof:		
	<ul> <li>Make sure that there is no one in the car.</li> </ul>		
	<ul> <li>Give a call and unlock the landing door with the triangular key.</li> </ul>		
	<ul> <li>Make sure that the elevator has stopped for adequate access to the car roof from the landing.</li> </ul>		
	<ul> <li>Press JHC and activate JREC before accessing the car roof.</li> </ul>		
2	Activation:		
	<ul> <li>After entering the car roof, only close the landing door.</li> </ul>		

## Step

#### Procedure

- 3 Operation:
  - Release JHC
  - Press and hold DREC\_U and DREC\_E to move the car upwards
  - Press and hold DREC\_D and DREC\_E to move the car downwards
  - Release DREC\_U or DREC\_D or DREC\_E to stop the car movement
  - Press JHC to stop the car movement

# 4 Deactivation:

- Press JHC
- First exit, then release JREC
- Switch JREC to "Normal"
- Open the shaft door and leave the car roof
- Release JHC only after leaving the shaft

#### Inspection Operation in Pit without TSD21





## 1 Pit box

Step	Procedu	re
1	Preparation for entering shaft pit:	
	<ul> <li>Make sure that there is no one in the ca</li> </ul>	ar.
	<ul> <li>Give a call and unlock the landing door</li> </ul>	with the triangular key.
	<ul> <li>Make sure that the elevator has stoppe roof from the landing.</li> </ul>	d for adequate access to the car
	<ul> <li>JHC and JREC can be activated before</li> </ul>	accessing the car roof.
	<ul> <li>Press stop JHSG1</li> </ul>	
	<ul> <li>Activate inspection JRESG</li> </ul>	
	<ul> <li>Press stop JHSG</li> </ul>	
2	Activation:	
	<ul> <li>Switch JRESG to "Inspection"</li> </ul>	
	<ul> <li>If necessary, return the pit ladder to its</li> </ul>	designated location
	<ul> <li>Release JHSG1 on Pit Box only if JRES "Inspection"</li> </ul>	SG has been switched to
3	Operation:	
	<ul> <li>Press and hold DRESG_U and DRESG</li> </ul>	<u>E</u> E to move the car upwards.
	<ul> <li>Press and hold DRESG_D and DRESG</li> </ul>	<u>E</u> to move the car downwards.
	<ul> <li>Release DRESG_U or DRESG_D or DI</li> </ul>	RESG_E to stop the car movement.

- Press JHSG on Pit Inspection Panel to stop the car movement.

#### Step

- 4 Deactivation:
  - Push the JHSG1 stop button.



- Set the JRESG switch to NORMAL.

If the car is in the door zone, the elevator control sends a lock command to all landing doors.

- Open the landing door and go out of the pit.
- Make sure that the pit ladder is in stowed position.
- Release the JHSG1 stop button.
   If the landing door is closed when the JHSG1 stop button is released:
   There is a beep, the LREF lamp starts to blink and the deactivation needs to be started again (go back to "Push the JHSG1 stop button").
- Close the landing door.
- Wait for the sound of the beep, then proceed with the specified triangular key operation.



Do the following triangular key operation:
 Unlock (1 ... 3 s) → Lock (1 ... 3 s) → Unlock (1 ... 3 s) → Lock the bottom landing door.



 A long beep of 10 s confirms that the deactivation is completed. If you open the landing door during the long beep, the deactivation is canceled and needs to be done again from the start.



 If there is no beep: The elevator status 65 stays on and the triangular key operation has to be done again.

Note: Alternatives to the specified triangular key operation:

- Use the RST INSP button on SMICHMI PCBA.
- Apply the special command 161 on HMI.

The distance above first floor = CF 2 PA 21 VL [0..200 step = 1, unit = 1 cm, default = 150]

The expected pulse pattern shall comprise an UNLOCKED - LOCKED - UNLOCKED sequence, each intermediate state (UNLOCKED - LOCKED - UNLOCKED) shall last for between 1 ... 3 s. In case any state (LOCKED or UNLOCKED) lasted less than 1 s or longer than 3 s, the controller will disregard the current pulse pattern and continue to wait for a valid pulse pattern.











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Inspection Operation at Top of Car with TSD21

Step	Procedure
1	Preparation for entering shaft pit:
	<ul> <li>Make sure that there is no one in the car.</li> </ul>
	<ul> <li>Give a call and unlock the landing door with the triangular key.</li> </ul>
	<ul> <li>Make sure that the elevator has stopped for adequate access to the car roof from the landing.</li> </ul>
	<ul> <li>Press JHC and activate JREC before accessing the car roof.</li> </ul>
	<ul> <li>After unlocking the door, if another call is needed then press DRZS.</li> </ul>
2	Activation:
	<ul> <li>Activate the TSD21 before entering the car roof.</li> </ul>
	<ul> <li>If necessary, extract/unfold the balustrade.</li> </ul>
	<ul> <li>Switch JREC to "Inspection"</li> </ul>
	<ul> <li>Release JHC only if JREC has been switched to "Inspection"</li> </ul>
3	Operation:
	<ul> <li>Press and hold DREC_U and DREC_E to move the car upwards.</li> </ul>
	<ul> <li>Press and hold DREC_D and DREC_E to move the car downwards.</li> </ul>
	<ul> <li>Release DREC_U or DREC_D or DREC_E to stop the car movement.</li> </ul>
	<ul> <li>Press JHC to stop the car movement.</li> </ul>
4	Deactivation:
	<ul> <li>Press the top of car stop button (JHC).</li> </ul>
	<ul> <li>Switch JREC to "Normal".</li> </ul>
	<ul> <li>If necessary, retract/fold the balustrade.</li> </ul>
	<ul> <li>Exit the top of car.</li> </ul>
	<ul> <li>Deactivate the TSD21 lever from the landing.</li> </ul>
	<ul> <li>Release the top of car stop switch (JHC) only after having exited the car roof.</li> </ul>
	<ul> <li>Close the shaft door giving access to the top of car.</li> </ul>
5	Reset of TSD21:
	<ul> <li>Check that all stopping devices have been released and all landing doors are closed and locked (with the help of HMI command 162, the controller will send a lock command to any door available in the system. This will help to close the safety chain in the TSD21 hardware exit procedure).</li> </ul>
	<ul> <li>Unlock and press DRZS button on SMICHMI to reset TSD21 system.</li> </ul>
	<ul> <li>LED LZS (RD) shall be turned off when the reset is succeeded.</li> </ul>

- Relock the DRZS button.



In case of only short pit and normal headroom, top-of-car access is same as without TSD21 (Activation of TSD21 lever is not necessary, reset of the TSD21 system is also not necessary. See table below).

Inspection Operation in Pit with TSD21



- All registered car calls will be served and all landing calls will be cancelled.
- The car first travels to the landing floor where the controller is installed and opens the doors, allowing the maintenance person to check that the car is empty.
- Press "RESET INSPECTION" button again.
- The doors are closed and the car starts to travel down until the car roof is at the floor level of the landing where the controller is located.
- Maintenance person can now open the shaft door with a triangular key (this action activates the TSD21 safety system).
- Press JHC.
- Entering car roof.
- Activate the TSD21 lever.
- Extract/unfold the balustrade, if any
- Switch JREC to "Inspection".
- Release JHC only if JREC has been switched to "Inspection"
- Press the top of car stop button (JHC)
- Switch JREC to "Normal"
- Exit the top of car
- Release the top of car stop switch (JHC) only after having exited the car roof
- Close the shaft door giving access to the top of car
- 2 Preparation for entering shaft pit:
  - Maintenance person goes to the lowest floor whose shaft door gives access to the pit, then open the shaft door with a triangular key.
  - Press JHSG1 on Pit Box close to the shaft door.
  - Entering shaft pit, if necessary with the help of the pit ladder.
- 3 Activation:
  - Switch JRESG to "Inspection".
  - If necessary, return the pit ladder to its designated location.
  - Release JHSG1 on Pit Box only if JRESG has been switched to "Inspection".

Step	Procedure		
4	Operation:		
	<ul> <li>Press and hold DRESG_U and DRESG_E to move the car upwards.</li> </ul>		
	<ul> <li>Press and hold DRESG_D and DRESG_E to move the car downwards.</li> </ul>		
	- Release DRESG_U or DRESG_D or DRESG_E to stop the car movement.		
	<ul> <li>Press JHSG on Pit Inspection Panel to stop the car movement.</li> </ul>		
5	Deactivation of pit inspection mode:		
	– Press JHSG1.		
	<ul> <li>Switch JRESG to "Normal".</li> </ul>		
	<ul> <li>Open the shaft door and leave the pit, if necessary with the help of the pit ladder.</li> </ul>		
	<ul> <li>If necessary, return the pit ladder to its designated location.</li> </ul>		
	<ul> <li>Release JHSG1 only after leaving the shaft pit.</li> </ul>		
	<ul> <li>Close the shaft door for pit access.</li> </ul>		
6	Deactivation of TSD21 safety system:		
	<ul> <li>Open the shaft door that gives access to the car roof.</li> </ul>		
	<ul> <li>Press the top of car stop button (JHC).</li> </ul>		
	<ul> <li>Retract/fold the balustrade, if any.</li> </ul>		
	<ul> <li>Deactivate the TSD21 lever.</li> </ul>		
	<ul> <li>Exit the top of car.</li> </ul>		
	<ul> <li>Release the top of car stop switch (JHC) only after having exited the car roof.</li> </ul>		
	<ul> <li>Close the shaft door giving access to the car roof.</li> </ul>		
7	Reset of TSD21:		
	<ul> <li>Check all stopping devices have been released and all landing doors are closed and locked (with the help of HMI command 162, the controller will send a lock command to any door available in the system. This will help to close the safety chain in the TSD21 hardware exit procedure).</li> </ul>		
	<ul> <li>Unlock and press DRZS button on SMICHMI to reset TSD21 system.</li> </ul>		
	<ul> <li>LED LZS (RD) shall be turned off when the reset is succeeded.</li> </ul>		
	<ul> <li>Relock the DRZS button.</li> </ul>		
In case the pit i	of short pit access, the reset of the TSD21 safety system also acts as reset of inspection as required by EN81-20.		

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In case of only short headroom and normal pit, pit access is same as without TSD21 (Activation of TSD21 lever on top of car is not necessary, reset of the TSD21 system is also not necessary. See table below), But the reset procedure to exit pit inspection mode is still the same and must be carried out to leave inspection mode.

The following tables highlight the main shaft access and exit procedure steps required for proper use of the TSD21 system.

#### Shaft Access Overview

	Car Top Access	Pit Access	Doors Access Monitoring
Short Head	Activate TSD21 lever and extract balustrade (if any)	Direct access to pit (Same as without TSD21)	On all doors giving access to the car roof (for example, except doors on lowest landing)
Short Pit	Direct access to top of car (Same as without TSD21)	On car roof, activate TSD21 lever <sup>1)</sup> On car roof, cycle top of car inspection Access pit	On all doors giving access to the pit
Short Head and Short Pit	Activate TSD21 lever and extract balustrade (if any)	On car roof, activate TSD21 lever and extract balustrade (if any). On car roof, cycle top of car inspection Access pit	On all doors

1) Foldable balustrade only required if short head.

# Shaft Exit Overview

	Car Top Exit	Pit Exit
Short Head	De activate TSD21 lever and retract balustrade (if any) Reset safety device	Pit inspection reset according to EN81-20 <i>(Same as without TSD21)</i>
Short Pit	(Same as without TSD21)	On car roof, de activate TSD21 lever Reset safety device
Short Head and Short Pit	De activate TSD21 lever and retract balustrade (if any) Reset safety device	On car roof, de activate TSD21 lever and retract balustrade (if any) Reset safety device

In *italic* are the cases which are the same as without TSD21 system.

# 3.7 Limited Safety Space in Endposition EN81-21

EN81-21 requires a permanent safety space in the end positions of the elevator hoistway. In installations where the permanent safety space can't be fulfilled due to reduced headroom and/or pit the required permanent safety space is substituted by a temporary safety space in line with the state of the art requirements in EN81-21. These installations are equipped with a type approved TSD (Temporary Safety Device) system.

Safety Signs On car roof:



On Car Roof (Crushing+Instruction) [41141759\_003; 26.05.2015]

In pit:



In Pit (Crushing+Instruction) [40700160\_027; 25.09.2015]

In control cabinet:





Low Head (Crushing) [41141759\_004; 26.05.2015]

Low Pit (Crushing) [41141759\_005; 26.05.2015]

Read Manual [41141759\_005; 26.05.2015]

# MARNING

It is forbidden t o manipulate the safety system of the elevator. In a TSD21 equipped elevator it is forbidden to move the car with persons outside the car and in the hoistway (shaft) as long as the TSD21 system is deactivated due to risk of crushing.

TSD21 Device (Temporary Safety Device) Hardware Description TSD21 device comprises of two metal bolts (1) located under the car on the left and right sides, and two stoppers (2) fixed to the car rails in a defined position (3) in the headroom, and/or two stoppers fixed on the car rails in a defined position in the pit. Each stopper includes a buffer (4) to soften the pin impact. A TSD21 lever (5) located on the car roof is used to move the pin out of the car footprint (6).



Telescopic Toe Guard for Short Pit A telescopic toe guard is used, extended under normal operation, retracted when the car is reaching the lowest position, and fulfilling the following condition: Normal operation is neutralized by a safety switch if the toe guard is not in the extended position. Due to the minimum pit depth of 800 mm, this contact (KSC) is only operated in case the elevator overruns the lowest stop and therefore is connected in the part of the safety chain which is neutralized in emergency electrical operation (recall).

Safety System	In addition, a safety system is connected to the controller. Any landing door or other opening point giving access to an area where the clearances are reduced is fitted with a safety contact (KNET) monitoring the activation of the emergency unlocking triangular key. When the emergency unlocking is operated, the safety system is activated disabling normal operation and the manual electrical brake lifting (PEBO) operation. By opening the safety chain, the machine brake is powerless/closed and the system is in a safe state.
Inspection Operation	To move the car in inspection operation, the metal bolts must be in the fully extended position. Refer to the figure of paragraph "TSD21 Device (Temporary Safety Device) Hardware Description".
Emergency Electrical Operation (recall)	Emergency electrical operation is only possible if the safety system is not activated and the movable bolts are in the fully retracted position.
Manual Electrical Brake Opening	The electrical lifting of the brake is only possible if the safety system is not activated or if the movable bolts are in the fully extended position.

# 3.8 Safe Access to Car Top and/or Pit in Case of Limited Safety Space in Endposition

The control unit of the elevator manages the required functionalities according to EN 81-21 by using PCBA SPHRBX, which contains a safety circuit according EN 81-20.

The manual opening of any landing door (KNETs), the retracted position of the movable bolts (KSR-A), if the balustrade (if any) is retracted (KBC-A/KFB) are monitored, which are parts of the safety circuit.

- The mechanical system with TSD21 has two metal bolts (1) located under the car on \_ the left and right sides.
- 2 stoppers (2) fixed to the car rails in a defined position (3) in the headroom and/or two stoppers fixed on the car rails in a defined position in the pit.
- Each stopper includes a buffer (4) to soften the pin impact. \_
- A TSD21 lever (5) located on the car
- Roof is used to move the pin out of the car footprint (6). \_





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- Normal mode А
- Metal bolt 1
- 2 Stopper 3
  - 5 Option in case of low pit or low 6
  - pit and head only
- TSD21 lever

Inspection mode

Buffer

Bolts expanded (generating safety space in end positions) **TSD21 Safety Signs** The TSD21 elevator explicitly indicated by the safety sign stickers on the car roof, in pit and control cabinet / MR.

Safety Signs

On car roof:



On Car Roof (Crushing+Instruction) [41141759\_003; 26.05.2015]

In pit:



In Pit (Crushing+Instruction) [40700160\_027; 25.09.2015]

In control cabinet:



Low Head (Crushing) [41141759\_004; 26.05.2015]



Low Pit (Crushing) [41141759\_005; 26.05.2015]

Read Manual [41141759\_005; 26.05.2015]

MARNING

It is forbidden t o manipulate the safety system of the elevator. In a TSD21 equipped elevator it is forbidden to move the car with persons outside the car and in the hoistway (shaft) as long as the TSD21 system is deactivated due to risk of crushing.

Correct working of shaft access detection (KNET) must be guaranteed.
### 3.8.1 TSD21 General Overview

### 3.8.1.1 TSD21 System Description

The TSD21 system consists of:

The control unit of the elevator manages the required functionalities according to EN 81-21 by using PCBA SPHRBX, which contains a safety circuit according EN 81-20.

The manual opening of any landing door (KNETs), the retracted position of the movable bolts (KSR-A), if the balustrade (if any) is retracted (KBC-A/KFB) are monitored, which are parts of the safety circuit.

- The mechanical system with TSD21 has two metal bolts (1) located under the car on the left and right sides.
- 2 stoppers (2) fixed to the car rails in a defined position (3) in the headroom and/or two stoppers fixed on the car rails in a defined position in the pit.
- Each stopper includes a buffer (4) to soften the pin impact.
- A TSD21 lever (5) located on the car
- Roof is used to move the pin out of the car footprint (6).





- A Normal mode
- 1 Metal bolt
- 2 Stopper
- 3 Option in case of low pit or low 6 pit and head only
- [39340; 23.08.2017]
  - B Inspection mode4 Buffer
  - 5 TSD2
    - TSD21 lever
    - Bolts expanded (generating safety space in end positions)

**TSD21 Safety Signs** The TSD21 elevator explicitly indicated by the safety sign stickers on the car roof, in pit and control cabinet / MR.

Safety Signs

On car roof:



On Car Roof (Crushing+Instruction) [41141759\_003; 26.05.2015]

In pit:



In Pit (Crushing+Instruction) [40700160\_027; 25.09.2015]

In control cabinet:



Low Head (Crushing) [41141759\_004; 26.05.2015]

Low Pit (Crushing) [41141759\_005; 26.05.2015]



Read Manual [41141759\_005; 26.05.2015]

It is forbidden t o manipulate the safety system of the elevator. In a TSD21 equipped elevator it is forbidden to move the car with persons outside the car and in the hoistway (shaft) as long as the TSD21 system is deactivated due to risk of crushing.

Correct working of shaft access detection (KNET) must be guaranteed.

#### 3.8.1.2 Main Additional Safety Measures with TSD21

 The TSD21 elevator ensures the necessary refuge space (based on EN81-21) in the headroom and/or in the pit, when a person moves the car in inspection mode.

Before accessing a reduced headroom or pit, the TSD21 lever must be active. The inspection mode will be blocked, if access has been detected (KNET) and the bolts are not fully extended (KSR). The activation of this TSD21 lever causes two metal bolts on both sides of the car structure to extend outwards, until they come into the projection of the TSD21 buffers. TSD21 buffers are mounted on the guide rails.

- The inspection travel is limited by an additional safety switch acting before the bolts hit the buffers.
- In addition, the TSD21 elevator blocks PEBO if access is detected.

Access detection is done by checking the use of the triangular lock for manual opening of the landing door, with a safety switch (KNET).

Upon a manual opening of a landing door, that can give access to the reduced headroom and/or pit, the TSD21 elevator is stopped, blocking the car and preventing the elevator to continue further in Normal Mode, when the landing door is closed again.

When a manual opening of a landing door is detected, in order to activate the Normal mode again, the safety system must be reset with the "RESET" button (DRZS) in the controller cabinet.

The DRZS has a padlock. When removing the padlock and before performing the reset, it must be ensured no one is in the shaft.

#### 3.8.2 How to Perform Maintenance on a TSD21 Installation

#### 3.8.2.1 Overview of TSD21 Shaft Access and Exit procedures

For maintenance purpose, the field technician needs to be able to access the car roof or/to the pit. On a normal elevator, the fitter calls the elevator with a landing call, after which he sends the car to the correction position and opens the landing door with a triangular key, to access the car roof or pit. If the car is not yet in the correct position, the fitter recloses the landing door, and move the car in the correct position, the fitter reopens the landing door and accesses the car roof or pit.

However, for TSD21 installation this sequence is not possible anymore, the additional safety measures with TSD21 will be activated after the first manual opening of a monitored landing door (KENT) and a special sequence for the shaft access and shaft exit need to be followed. The following tables highlight the main shaft access and exit procedure steps required for proper use of the TSD21 system.



#### Shaft Access Overview

	Car Top Access	Pit Access	Doors Access Monitoring
Short Head and Normal Pit	Activate TSD21 lever and extract balustrade (if any) Activate top of car inspection	Direct access to pit, activate pit inspection (Same as without TSD21)	On all doors giving access to the car roof (for example, except doors on lowest landing)
Short Pit and Normal Pit	Direct access to top of car, activate top of car inspection (Same as without TSD21)	On car roof, activate TSD21 lever <sup>1)</sup> On car roof, cycle top of car inspection Access pit, activate pit inspection	On all doors giving access to the pit
Short Head and Short Pit	Activate TSD21 lever and extract balustrade (if any) Activate top of car inspection	On car roof, activate TSD21 lever and extract balustrade (if any). On car roof, cycle top of car inspection Access pit, activate pit inspection	On all doors

1) Foldable balustrade only required if short head.

# Shaft Exit Overview

	Car Top Exit	Pit Exit
Short Head and Normal Pit	Deactivate TSD21 lever and retract balustrade (if any) Reset safety device	Pit inspection reset according to EN81-20 (Same as without TSD21)
Short Pit and Normal Pit	(Same as without TSD21)	On car roof, de activate TSD21 lever Reset safety device
Short Head and Short Pit	De activate TSD21 lever and retract balustrade (if any) Reset safety device	On car roof, de activate TSD21 lever and retract balustrade (if any) Reset safety device

- In general, before accessing or exiting the car roof or the pit, the stopping device must always be activated to avoid the risk of movement due to activation of the other panel.
- The activation of the TSD21 lever (and the extraction of the balustrade, if any) does not activate top-of-car inspection, therefore movement by activation of pit inspection is possible, except before the first activation of top-of-car inspection.
- After having exited the pit, the technician can use the top-of-car inspection to move to the top floor in order to reset the safety system in the control cabinet / MR.

# 3.8.2.2 Inspection Operation at Top of Car with TSD21

The whole sequence for the inspection at top of car with TSD21 consists of the following steps:

- Preparation for entering car roof
- Activating the inspection mode
- Inspection operation
- Deactivation of inspection mode
- Reset of TSD21.



	<b>DRZS reset button</b> To avoid unauthorized resetting of the monitoring system			
	Before starting the procedure, the DRZS reset button must to be locked or secured with a padlock to avoid unauthorized resetting of the monitoring system when the pit or roof are accessed.			
Step 1	Accessing the Car Roof			
	Preparation for entering car roof:			
	<ul> <li>Activate the "Automatic Car Positioning Sequence" by pressing the "RESET INSPECTION" button on SMICHMI for more than 3 seconds when controller is in normal mode</li> </ul>			
	<ul> <li>All registered car calls are served and all landing calls are cancelled The car first travels to the landing floor where the controller is installed and opens the doors, allowing the maintenance person to check that the car is empty</li> </ul>			
	<ul> <li>Press "RESET INSPECTION" button again</li> </ul>			
	<ul> <li>The doors are closed and the car starts to travel down until the car roof is at the floor level of the landing where the controller is located</li> </ul>			
	<ul> <li>Open the landing door with a triangular key. This activates the TSD21 safety system.</li> <li>The elevator status indication on the HML changes to "67"</li> </ul>			
	- Pless JHC			
i	When the procedure is stopped in step 4, the elevator <b>will go back to Normal Mode</b> after 180 seconds.			
Step 2	Entering the car roof and activating the Inspection Mode			
	Once the fitter has accessed the car roof, he can activate the Inspection Mode by after turning the TSD21 lever.			
	Activation:			
	<ul> <li>Activate the TSD21 lever</li> </ul>			
	<ul> <li>If necessary, extract/unfold the balustrade</li> </ul>			
	<ul> <li>Switch JREC to "Inspection"</li> </ul>			

 Release JHC only if JREC has been switched to "Inspection" The elevator status indication on the HMI changes to "54", which means that the top of car inspection mode is active.



### Step 3

### Inspection Operation of Top of Car

Operation:

- Press and hold DREC\_U and DREC\_E to move the car upwards
- Press and hold DREC\_D and DREC\_E to move the car downwards
- Release DREC\_U or DREC\_D or DREC\_E to stop the car movement
- Press JHC to stop the car movement.



Inspection Panel Top of Car REC without TSD21 [604620\_035; 07.12.2015]

# Step 4 **Deactivating the Inspection Mode** Deactivation and exit the car roof: Press the top of car stop button (JHC) Switch JREC to "Normal" If necessary, retract/fold the balustrade Deactivate the TSD21 lever Exit the top of car Release the top of car stop switch (JHC) only after having exited the car roof Close the landing door giving access to the top of car. Step 5 Reset of TSD21 system The reset of the safety system is only possible by pressing the reset button (DRZS) which is located in the control cabinet. Preconditions for the reset are: Landing doors are closed and locked (KTS/KV) The movable bolts are in the inactive position (KSR-A) Inspection operation is not active anymore (JREC/JRESG) No stop switch is active (JHC, JHSG, JHM, ...)

- The balustrade (if any) is retracted (KBC-A/KFB).

	In case where the car is located on a landing during the reset, it is possible that the landing door is unlocked by the released car door. In this case, the landing door needs to be closed and locked by closing the car door. The status of the landing door can be observed on the HMI (IRTS).
Resetting of TSD21	<ul> <li>Press the DRZS button on SMICHMI until the TSD21 system is reset. The LZS LED turns off when the reset is successful</li> <li>If the resetting fails: Check all stop buttons (JRM, JHC, JHSG) are released and all landing doors are closed and locked</li> <li>Close and lock the lid of the DRZS button</li> <li>Check the elevator status indication on the HMI has reverted to the status before TSD21 mode activation.</li> </ul> <b>3.8.2.3 Inspection Operation in Pit with TSD21</b> For the Inspection operation in pit, it is required to at first enter car roof to activate TSD21 before entering the pit. The pit inspection operation sequence with TSD21 consists of the following steps: <ul> <li>Preparation for entering car roof</li> </ul>
	<ul> <li>Entering the shaft pit</li> <li>Activation and operation of Pit Inspection Mode</li> <li>Deactivation of Pit Inspection Mode</li> <li>Deactivating TSD21</li> <li>Reset of TSD21.</li> </ul>
MARNING	<ul><li>DRZS reset button</li><li>To avoid unauthorized resetting of the monitoring system</li><li>Before starting the procedure, the DRZS reset button must to be locked or secured with a padlock to avoid unauthorized resetting of the monitoring system when the pit or roof are accessed.</li></ul>
Step 1	<ul> <li>Accessing the Car Roof and Activating TSD21 Safety System</li> <li>Preparation for activating TSD21 safety system</li> <li>Activate the "Automatic Car Positioning Sequence" by pressing the "RESET INSPECTION" button on SMICHMI for more than 3 seconds when controller is in normal mode</li> <li>All registered car calls are served and all landing calls are cancelled The car first travels to the landing floor where the controller is installed and opens the doors, allowing the maintenance person to check that the car is empty</li> <li>Press "RESET INSPECTION" button again</li> <li>The doors are closed and the car starts to travel down until the car roof is at the floor level of the landing door with a triangular key. The elevator status indication on the HMI changes to "67", which means that the TSD21 mode is active</li> <li>Press JHC</li> <li>Enter the car roof</li> <li>Activate the TSD21 lever</li> <li>Extract/unfold the balustrade, if any</li> <li>Switch JREC to "Inspection"</li> <li>Press the top of car stop button (JHC)</li> <li>Switch JREC to "Normal"</li> </ul>

- Exit the top of car
- Release the top of car stop switch (JHC) only after having exited the car roof
- Close the landing door giving access to the top of car.

Step 2

Step 3

Step 4

#### **Preparation for Entering Shaft Pit**

Inspection Operation in Pit with TSD21



Pit Inspection Panel RESG [604620\_036; 23.08.2017] 1 Pit box

- Maintenance person goes to the lowest floor whose landing door gives access to the pit, then open the landing door with a triangular key
- Press JHSG1 on Pit Box close to the landing door
- Enter the pit, if necessary with the help of the pit ladder.

#### Activation and Operation of Pit Inspection Mode

#### Activation:

- Switch JRESG to "Inspection"
- If necessary, return the pit ladder to its designated location
- Release JHSG1 on Pit Box only if JRESG has been switched to "Inspection".

#### Operation:

- Press and hold DRESG\_U and DRESG\_E to move the car upwards
- Press and hold DRESG\_D and DRESG\_E to move the car downwards
- Release DRESG\_U or DRESG\_D or DRESG\_E to stop the car movement
- Press JHSG on Pit Inspection Panel to stop the car movement.

#### Deactivating of Pit Inspection Mode

- Press JHSG1
- Switch JRESG to "Normal"
- Open the shaft door and leave the pit, if necessary with the help of the pit ladder
- If necessary, return the pit ladder to its designated location
- Release JHSG1 only after leaving the shaft pit
- Close the shaft door for pit access.

Step 5	Deactivation of TSD21 Safety System
	<ul> <li>Open the landing door that gives access to the car roof</li> <li>Press the top of car stop button (JHC)</li> <li>Retract/fold the balustrade, if any</li> <li>Deactivate the TSD21 lever</li> <li>Exit the top of car</li> <li>Release the top of car stop switch (JHC) only after having exited the car roof</li> <li>Close the landing door giving access to the car roof.</li> </ul>
Step 6	Reset of TSD21
	The reset of the safety system is only possible by pressing the reset button (DRZS) which is located in the control cabinet.
	<ul> <li>Check all stopping devices have been released and all landing doors are closed and locked (with the help of HMI command 162, the controller will send a lock command to any door available in the system. This will help to close the safety chain in the TSD21 hardware exit procedure)</li> </ul>
	<ul> <li>Unlock and press DRZS button on SMICHMI to reset TSD21 system</li> </ul>
	<ul> <li>LED LZS (RD) shall be turned off when the reset is succeeded</li> </ul>
	<ul> <li>Relock the DRZS button.</li> </ul>
i	In case of short pit access, the reset of the TSD21 safety system also acts as reset of the pit inspection as required by EN81-20.
i	In case of only short headroom and normal pit, pit access is same as without TSD21 (Activation of TSD21 lever on top of car is not necessary, reset of the TSD21 system is also not necessary), But the reset procedure to exit pit inspection mode is still the same and must be carried out to leave inspection mode.

Main Interface Controller





- 2
- MM card

# 3.9 Instruction for Local Car Floor Finishing on Naked Honeycomb Floor

### 3.9.1 Type of Glue

Local floor finishing may only be fixed to the naked honeycomb panel by the use of a non corrosive glue, for example Sikacryl<sup>®</sup> S (Schindler ID No. 996985) or Sika Bond T8. The selected glue needs to have similar properties as the above mentioned glue types.

Any corrosive glue or cement must be avoided as it could lead to serious damages of the honeycomb structure.

For the joints of tiles, non corrosive and elastic products as Sikaflex-11 FC+ can be used. In any case the instructions of the glue supplier for ground preparation must be followed. In case of doubt, clarify with the glue supplier.

### 3.9.2 Usage of Naked Floor

The naked honeycomb floor must never be used without an adequate covering which distributes the load to a wide surface of the honeycomb panel. Any point load to the honeycomb panel must be strictly avoided as it could lead to immediate damage to the honeycomb.

If the final floor finishing can not be installed during the car installation, the naked honeycomb must be protected with a temporary floor, for example wood plate.

Maximum allowed point load for the naked honeycomb panel is 500 N/5 cm<sup>2</sup>.

### 3.9.3 Local Floor Finishing

It is in the customer responsibility to select the local floor finishing in a dimension able to withstand the possible load cases of the car for example buffer run, safety break or emergency stop.

# 4 Maintenance Information and Instructions

4.1 Prerequisites	
Safe operation, efficient and hazard-free maintenance, and rapid response in emergencies can only be guaranteed if the following points are observed and carried out by the owner of the installation as his own responsibility.	
Only competent persons are permitted to enter the machine room and hoistway. Building maintenance and/or cleaning work in the machine room or in the hoistway must be carried out only by competent persons or in the presence of a competent person. Prior to such work, all safety measures and precautions must be in place.	
<ul> <li>Access Regulations</li> <li>Doors giving access to the machine room and hoistway for maintenance must be kept locked at all times. It must, however, be possible to open the doors from the inside without a key.</li> <li>A ladder must be available to permit safe access to the hoistway pit.</li> <li>Access routes to the machine room and hoistway must be easy and safe to pass through at all times. If one or more of the access routes are blocked, the installation must be taken out of service.</li> </ul>	
Adequate lighting of the machine room, hoistway and access routes must be guaranteed at all times. The lighting of the control cabinet for MRL has to be installed by the building site according to the disposition plan.	
The owner of the installation must ensure that the temperature in the machine room and in the hoistway is maintained between + 5 $^{\circ}$ C and + 40 $^{\circ}$ C. The machine room and the hoistway must be adequately ventilated. The machine room and the hoistway may not be used for ventilating spaces which are not associated with the installation.	
4.2 Preventive Maintenance	
Preventive maintenance consists of regular inspection of the electrical and mechanical safety equipment, additional inspection and adjustment work on the entire installation as well as lubrication and cleaning. Preventive maintenance does generally not cover the replacement of components.	
Preventive maintenance is carried out in accordance with the maintenance plan specified by the installer. The maintenance visits depend on various factors relating to the specific installation and to the environment. Any legal requirements must also be complied with. The standards define the minimum requirements.	

NOTICE	<b>Responsibility</b> Preventive maintenance work could only be carried out by competent persons. An exception is the simple cleaning work which is described in the chapter "Maintenance Operations/Cleaning". The name of the maintenance company must be visibly displayed in the elevator installation.	
	<b>Safety Precautions</b> Before starting preventive maintenance, precautions must be taken to eliminate risks to persons or property. In particular:	
	<ul> <li>The prerequisites for maintenance according to chapter "Maintenance Operations/Prerequisites" must be fulfilled to allow preventive maintenance</li> <li>Entrances to the hoistway (maintenance doors) and to the machine room must be closed off for unauthorized persons</li> </ul>	
	<ul> <li>Notices must be displayed in all landings indicating that the elevator is out of operation</li> </ul>	
	<ul> <li>Any unsafe conditions (defective hoistway lighting, missing ladder, etc.) relevant to carrying out preventive maintenance must be reported immediately to the owner of installation.</li> </ul>	
Utilization of Hoistway	The hoistway may not be used for other purpose than the elevator installation. It is not permitted to have equipment present which does not belong to the installation.	
	4.3 Cleaning	
Scope	The areas to be cleaned are the inside of the car, the landing doors and door frames, push-buttons and indicator plates and the car and landing door sills.	
NOTICE	Responsibility Only competent persons could carry out cleaning in the hoistway.	
	A competent person must be present when the cleaning of the machine room, hoistway (glass enclosure), and pit is carried out. A competent person could carry out this work if he has been instructed in the safety measures required as well as the operation of the elevator (switching off and back on), or else the relevant safety measures have been carried out by a competent person before any such work is begun.	
	Safety Precautions When electrical cleaning equipment is used in the car, care must be taken to ensure that the car doors cannot close while the equipment is connected to the power supply.	

## 4.3.1 Safety Equipment

- All people involved must know and follow the company and local safety regulations.
- Protective clothing and appropriate safety equipment must be worn.



# 4.3.2 Instructions for Cleaning

The following rules must be observed when cleaning:

- Never use cleaning agents containing strong solvents or abrasives
- Always try mechanical cleaning with soapy water before using solvents.
- All materials can be cleaned using a cloth and soapy water.
- When cleaning several different materials always proceed by taking into account the method of cleaning the most sensitive material.

# CAUTION Water in Car, Hoistway or Pit

Water must not be allowed to flow into the car, hoistway or pit.

Clean door sills and door grooves with a vacuum cleaner. Use slow-vaporizing solvents such as kerosene to loosen solidified dirt then brush it out. If necessary scratch out the solidified dirt.

# NOTICE Door Cleaning

Clean car lining panels, car doors and landing doors as appropriate for the material.

Materials with a structured surface, or which show finishing marks (brushed, grained, etc.), must be cleaned in the direction of the surface finish. Cleaning across the direction of the finish can damage the surface.

#### 4.3.3 Cleaning Agents

**Stainless Steel** 

Recommended cleaning agents: Commercially available stainless steel cleaner (with or without solvents), such as isopropyl alcohol or ketone.

**Polished Stainless Steel** has a very sensitive finish. Use a preparatory stainless steel polish. Buff with a clean, white cotton cloth to a highly polished finish.

Patterned/Etched Stainless Steel is to be cleaned as follows:

- Clean off surface finish with a dampened cloth using warm, soapy water (not a detergent)
- Rinse off using a clean dampened cloth and cool, clean water
- Allow to dry and then buff with a clean, dry, white cotton cloth.

**Colored Stainless Steel** requires extreme care. Clean following the same procedure as for Patterned/Etched Stainless Steel.

Aluminium	Recommended cleaning agents: Liquid cleaning and degreasing agents. Apply with a soft cotton cloth or sponge, polish, and rub dry.	
Copper, Brass, Bronze	Recommended cleaning agents: Liquid chrome and brass cleaning agents. Apply sparingly with a soft cotton cloth, polish, and rub dry.	
Wood and Veneer	Recommended cleaning agents: Liquid cleaning and degreasing agents. Apply with a soft cotton cloth or sponge, polish, and rub dry.	
Glass and Mirror	Recommended cleaning agents: Commercially available glass cleaning liquid. Apply sparingly with a soft cotton cloth, polish, and rub dry.	
Synthetic Resin Panels	Recommended cleaning agents: Commercially available plastic cleaner (solvent containing alcohol or hydrocarbons). Clean with a soft cotton cloth. Apply cleaning agents sparingly. Clean, polish, wipe dry.	
Painted Finishes	Recommended cleaning agents: Mild, liquid degreasing agents based on alcohol or hydrocarbons. It is advisable to test the reaction on an unobtrusive spot before using on a large surface. Clean with a damp, soft cotton cloth.	
Plastic Laminates	Recommended cleaning agents: Commercially available plastic cleaner. Containing only alcohol or hydrocarbon solvents. It is advisable to test the reaction on an unobtrusive spot before using on a large surface. Clean with a damp, soft cotton cloth.	
Carpet	Recommended cleaning agents: Commercially available carpet cleaning products or solvents based on hydrocarbons or alcohol. Vacuum clean, shampoo, then rub with a damp sponge. Wipe stubborn marks clean with a cloth soaked in solvent (based on hydrocarbons or alcohol), then dry well.	
Synthetic/ Rubberized Floor Coverings	Recommended cleaning agents: Liquid cleaning and degreasing agents or alcohol such as propyl alcohol. Wipe with a damp floor cloth.	
Stone and Tiles	Recommended cleaning agents: Soapy water.	
Threshold Sills and Tread Plates	Recommended cleaning agents: Warm, soapy water (not a detergent). Brush sill channels to remove loose dirt and dust. Use vacuum cleaner where appropriate. Clean off surface with a dampened cloth using a little warm, soapy water. Rinse using a clean, dampened cloth and cool, clean water. Allow to dry.	
Lighting	Cloth dampened with soapy water (not a detergent). Clean off surface using a dry cloth.	
Buttons, Indicators, and Faceplates	To be treated as per instructions with the recommended cleaning agents for the specific material as described in this part of the manual.	

# 4.4 Special Tools

The following tools will be required to carry out specific maintenance tasks and can be purchased at your local Schindler office.



Tool Name	Description	Part Number
	To move the elevator under inspection speed from landing control station	57815799
Recall Control Unit [43402603_008; 17.03.2016]		
<b>Cleaning</b> Do not use any non ap STM.	proved cleaning agents to clean the STM, it ma	ay damage the

Always use approved cleaning agents.

BYPASS Connector	Kit for bypass plug	57815299
BESE Connector	Substitutes ESE (When not connected)	57815055
Installation Travel Kit	Adapter set for installation travel on car	57815930
GBP Reset Connector	Reset tool for GBP	56712527

**Lubricants and Oils** 

 The use of the wrong lubricants can effect safety and cause extensive damage requiring costly repairs.

 Only the lubricants and oils (gear oil) listed in the maintenance manual could be used.

 **NOTICE Disposal** 

 Lubricants and oils must be taken back by the maintenance company and disposed of in accordance with the legal requirements.

NOTICE

# 4.5 Repairs

# Scope Repairs include the repair or replacement of worn and/or defective safety components and/or other components. Responsibility NOTICE Only competent persons could carry out repairs. **Safety Precautions** CAUTION Before starting repair work, precautions must be taken to eliminate risks to persons or property. In particular: The prerequisites for maintenance according to chapter "Maintenance Operations/Prerequisites" must be fulfilled to allow preventive maintenance Entrances to the hoistway (maintenance doors) and to the machine room must be closed off for unauthorized persons Notices must be displayed indicating that the elevator is out of operation Any unsafe conditions (defective hoistway lighting, missing ladder, etc.) relevant to carrying out preventive maintenance must be reported immediately to the owner of installation. **Replacement of Safety Components ∧** CAUTION Parts which have been copied, modified, or subsequently reworked, can put the safe operation of the installation at risk, reduce the specified lifetime or could result in dangerous operating conditions. If safety components are replaced, only original spare parts with a corresponding declaration of conformity, could be used. **Replacement of** Parts and accessories have been specially designed for this elevator. We draw specific **Other Components** attention to the fact that components and accessories supplied by third parties have not been tested or approved by the installer. Installing or using such products (or installing used components), can have a negative effect on characteristics resulting from the design (such as lifetime, operational safety, ride comfort) and can be dangerous. Lubricants and Oils Only the lubricants and oils (gear oil, hydraulic oil) listed in the maintenance manual may be used. The use of other lubricants can affect safety and cause extensive damage requiring costly repairs. Disposal NOTICE Lubricants and in particular motor and hydraulic oils belong to the classes of materials which could cause water pollution.

Used lubricants and oils must be taken back by the maintenance company and

Unauthorized interventions or manipulations can cause damage or accidents.

disposed of in accordance with the legal requirements.

Major repairs or corrective actions must be recorded in the logbook.

**Registration in the** 

Logbook

Unauthorized

Interventions

Liability

Neither the manufacturer nor the installer can be held liable by the owner of the installation for any damage which occurs as a result of using modified parts, non-original or non matching quality spare parts or components which have not been tested by the installer.

Component	Type of Lubricant	Comments
Gearless motor		No lubrication needed
Car and Counterweight guide rails	i) HLP68 ii) HH150	For colder countries For warmer countries
Traction media		Lubrication not allowed!
Speed governor rope		Lubrication not allowed!
Door system (car and landing doors)		No lubrication needed
Car and Counterweight diverting pulleys		No lubrication needed

#### 4.5.1 List of Lubricants

# 4.6 Periodical Examinations and Tests after Significant Modifications and Incidents

#### Scope

The periodical examinations and tests consist of the safety check of the installation. The purpose of "Periodical Examinations and Tests after Significant Modifications or Critical Incidents" is to ensure that the installation conforms to the regulations.

NOTICE	<ul><li>Responsibility</li><li>A notified body in accordance with local or national regulations could carry out any type of inspection.</li><li>If there are no specific regulations, the owner of the installation has to mandate a Notified Body or the maintenance company.</li></ul>
▲ CAUTION	<ul> <li>Safety Precautions</li> <li>Before starting a periodic or special examination, precautions must be taken to eliminate risks to persons or property. In particular:</li> <li>The prerequisites for maintenance according to chapter "Maintenance Operations/Prerequisites" must be fulfilled to allow preventive maintenance</li> <li>Entrances to the hoistway (maintenance doors) and to the machine room must be closed off for unauthorized persons</li> <li>Notices must be displayed indicating that the elevator is out of operation</li> <li>Any unsafe conditions (defective hoistway lighting, missing ladder, etc.) relevant to carrying out preventive maintenance must be reported immediately to the owner of installation.</li> </ul>
Registration in the Logbook	Periodical examinations and tests after significant modifications or critical incidents must be recorded in the logbook and a copy of the inspection report must be attached.

# 4.7 General Maintenance Instructions for the Elevator

Prerequisites	Examination and maintenance activities are restricted to competent persons.
Scope	The objective of the maintenance instructions is to offer to the owner, and the competent maintenance persons, information on how to maintain the installation to the highest possible standards. This requires regular functional controls and checks. Based on the results of those interventions the components needs to be cleaned, lubricated, adjusted or replaced where necessary.
Responsibility	It is the obligation of the installer to update maintenance activities after any modifications.
Safety Precautions	The overall responsibility for safe and correct execution of maintenance activities remains with the maintenance company. It is the obligation of the maintenance company to guarantee safety and availability of the elevator through the relevant maintenance program.

# 4.8 Maintenance Plan - Guideline

Frequency of the checks must be defined by the maintenance company taking into account the environment and usage of each installation. In addition local statutory requirements must also be considered.

Task
Landing entrances and doors
Landing operating panel
Car entrance
Car doors
Car door locking devices
Car door safety devices
Car operating panel
Car interior: light / wall panels / hand rails / floor / indicators
Car interior: notices and inspections
Car alarm / communication system
Car emergency light
Leveling accuracy
Controller cabinet lockable and signage
Controller documentation and emergency instructions
Control connection tightness / fuses / circuit breakers
Hoistway (well) lighting
Electrical safety devices
Car top equipment, notices and instructions
Car top inspection control including all safety devices and switches
Car door equipment including all safety devices and switches
Car guide shoes and lubrication
Machine fixings / cooling fan/ connections / encoders
Machine traction pulleys / retainers
Machine brake and electrical contacts
Traction media fixation points
Electrical drive (ACVF) fixation points / cooling fan / connections
Speed governor
Speed governor and rope connections
Traveling cables, fixation and routing
Landing doors unlocking mechanism
Landing doors locking mechanism (electrical and mechanical)
Hoistway (well) mechanical components
Hoistway (well) wiring, lighting and all safety devices and switches
Hoistway (well) elevator information
Traction media and end connections
Counterweight guide shoes and lubrication
Counterweight tractions media pulleys and retainers
Counterweight frame / weights / weight stoppers
Buffers including all safety devices and switches
Speed governor pit pulley / rope / tension
Speed governor pit safety device and switches
Safety gear including all safety devices and switches

Tüsk
Car and counterweight frame retainers
Protection of snag points
Fire recall functionality, including JBF, KBF

- 4.9 Bionic Control
- 4.9.1 Overview



Overview



Schindler 3100/3300/6300 Main Components BIC 7 [43402603\_001; 24.07.2017]

- A Car bottom components
- 1 220 ... 400 V in building
- 2 Power supply lines
- 3 Car light supply
- 4 Phone Line / intercom
- 5 RNO
- 6 Building interface
- 7 Control cabinet
- 8 Drive control
- 9 Supervisory panel

#### 4.9.1.2 Bionic 7 Bus System





Bus System [604639\_007; 27.08.2017]

- CAN bus termination switch on SMICFC Default position: "OFF". (ACVF and CCU connected If CCU is not connected, disconnect the travelling cable and set the switch to "ON". (Bus termination on SMICFC, for example during installation travel mode)
- 2 CAN bus is terminated automatically in the ACVF
- 3 CAN bus is terminated automatically on SDIC7x
- 4 Default fixtures for Bionic 7 (FI GS LOP/LIP/COP with CANCP)
- 5 Biobus Extension (LCU2 and LCUM2 interfaces)
- 6 Building interface BIOGIO and machine room located LCUX
- 7 Synchronization cable XCF is required only in case of LCU teaching
- 8 Varidor V15

# 4.9.1.3 User Interface (HMI)



[24178; 01.12.2015]

Pos.	Description and Remarks
1	Travel direction of the car (UP, DOWN or "-" for not defined)
2	Actual car speed [in 10 mm/s]
3	<ul> <li>Virtual LED "IUSK" indicating safety circuit status:</li> <li>"Asterisk ON" indicates that the safety circuit is closed and energized.</li> <li>"_" indicates that the safety circuit up to contact IUSK is open.</li> </ul>
4	<ul> <li>Safety LED "ISPT" indicating safety contact status:</li> <li>"Asterisk ON" indicates that the safety circuit is closed from contact IUSK up to ISPT.</li> <li>"_" indicates that the safety circuit is open from contact IUSK up to ISPT.</li> </ul>
5	<ul> <li>Safety LED "IRTS" indicating safety contact status:</li> <li>"Asterisk ON" indicates that the safety circuit is closed from contact ISPT up to IRTS.</li> <li>"_" indicates that the safety circuit is open from contact ISPT up to IRTS. In this case, at least one landing door is open (contact KTS).</li> <li>"!" indicates that the safety circuit is bridged using a LOCK/LAND bypass socket.</li> </ul>
6	<ul> <li>Safety LED "ISK" indicating safety contact status:</li> <li>"Asterisk ON" indicates that the safety circuit is closed from contact IRTS up to ISK.</li> <li>"_" indicates that the safety circuit is open from contact IRTS up to ISK.</li> <li>"!" indicates that the safety circuit is bridged using a CAR bypass socket.</li> <li>"U" indicates that the safety circuit is bridged using SUET device.</li> </ul>



Position no. 3, 4, 5, 6 show the name of the first safety chain tap, which is inactive if the up button is pressed.

Pos

**Description and Remarks** 

7 Number = Actual floor level of the car

Pos	Description and Remarks
8, 9	Door status (door 1 or door 2, respectively), see figure
	Indicates the current elevator status, door status is blank if no door is present
	a) Door open
	b) Door closing
	c) Door opening
	d) Door closed
	e) Door locked
	f) Door stopped
	g) Door status unknown
	If Varidor 15 door detected further status are shown:
	h) Door power failure
	i) Door communication lost
	j) Door inspection mode
	k) Door over-temperature
	I) Door internal error
	m) Door background error recovery
	a b c d e f g
	PP CC ii tt ee ee
	 h i j k l m

[604639\_020; 01.12.2015]

4.9.1.4	Elevator	Status	(Indication	on HMI)
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# System Status

No	System Status	No	System Status
00	Out of service operation	53	Inspection machine room
01	Passenger travel operation	54	Inspection top of car
02	Independent operation, reservation control	57	Test travel
03	Fire operation	58	Acceptance Test mode
05	Emergency power operation without load monitoring	59	Learning travel
06	Earthquake operation	60	Inspection preparation travel
08	Sprinkler operation	61	Overspeed governor reset travel
10	Attended passenger travel operation	65	Inspection in pit
11	Passenger travel operation without load monitoring	67	TSD21
13	Power saving mode	70	Elevator recovery
16	Hospital emergency travel	71	Elevator temperature recovery
19	Passenger travel full load service	72	Elevator car position recovery
20	In car alarm passenger travel operation service	73	Elevator door position recovery
29	Move around operation	75	Out of service due to safety chain open at ISPT
37	Out of service due to stop in car	80	Stop switch
39	Out of service due to car overload	86	Stop switch pressed in the pit
40	Out of service due to invalid configuration data	87	Out of service due to brake failure (brake torque monitoring test failed)
42	Out of service due to invalid LMS configuration	88	Out of service due to static safety circuit open
44	Out of service from remote	91	Elevator startup
45	Out of service STM monitoring failure	97	Elevator breakdown persistent limited operation
51	Installation travel	98	Elevator breakdown
52	Configuration mode	99	Elevator breakdown persistent

# 4.9.1.5 Buttons Navigation

# **Buttons Navigation**



HMI on SMICHMI [23261; 31.08.2007]

Name	Description
ESC	<ul><li>Go up one level in the menu tree</li><li>Leave menu/item (without saving anything)</li></ul>
UP/DOWN	<ul><li>Navigate up or down within the menu tree</li><li>Increase or decrease the displayed value</li></ul>
OK (RETURN, ENTER)	<ul><li>Go down one level in the menu tree</li><li>Confirm the entered value</li></ul>

# **Menu Functions**

Main Menu	Menu Function	Main Menu	Menu Function
10	Special commands such as Reset, Learning Travel, Car Calls, etc.	50	Diagnostics, error log
20	Automatic (Assisted) acceptance tests	60	Statistics
30	Status, system info	70	ACVF monitoring (Biodyn xx C BR, Vacon NXP)
40	Configuration		
	Overview Ma	ain Menu	

#### 4.9.2 Maintenance Checks

#### 4.9.2.1 LED Interpretation

#### LEDs on SMICHMI2x

Name Color Description **INSP (LREC)** Yellow Inspection mode NORM (LREC\_A) Green Normal mode ERR Red Error DWNLD Yellow Software download (SW\_DWLD) LUET Blue Elevator in door zone +26 VPWR Green 24 V-NGL supply present on SMICFC2x Blinks during BioBus communication, ON when BioBus is 0 V BBUS Green LZS On when SPHR device is activated (populated only Red on SMICHMI21)

LEDs on SDIC7x:

LED	HW Relevant	Color	Set by
PWR	Light ON when 26 V_NGLC or 13 V_NSGC present	Green	HW
CANC	Light ON when CAN1 (elevator bus) communication cannot be established by the $\mu$ C	Red	μC
CANCx	Light ON when CAN2 (car bus) communication cannot be established by the $\mu$ C	Red	μC
LUET	Light ON when output 'LUET' is active	Green	μC
ISK	Light ON when input 'T5/ISK' on SMICFC PCBA is active	Green	μC
PHS	Light ON when input 'PHS' is active	Green	μC
2PHS	Light ON when input '2PHS' is active	Green	μC
UET	Light ON when input 'RFUET' is not active	Red	μC
NOK	Light ON when $\mu$ C is in reset mode, $\mu$ C at startup, $\mu$ C not programmed, $\mu$ C watchdog timer is elapsed, or a hardware problem is detected by $\mu$ C. Light OFF when $\mu$ C and hardware work both correctly	Red	μC
DWNLD	Blinking when SW/FW download process is ongoing	Yellow	μC
LMS	Light ON if 'CLC1' input frequency < 10 kHz or > 20 kHz Light OFF if 'CLC1' input frequency $\ge$ 10 kHz and $\le$ 20	Red	μC
ХСОР	Light ON when input 'COP_DETECT' not active	Red	μC
DOOR/CANT	Light ON when door front side not connected	Red	μC

LED	HW Relevant	Color	Set by	
2DOOR/2CA NT	Light ON when door rear side not connected	Red	μC	
REC	Blinking when input 'N_REC' or 'N_JHC' active	Yellow	μC	
KSE-U	Light ON when input 'KSE_U' active	Green	μC	
KSE-D	Light ON when input 'KSE_D' active	Green	μC	

### LEDs on SEM3x

Name	Description
BATT12	Yellow LED - indicates the status/level of the 12 V battery
	<ul> <li>ON = Normal operation</li> </ul>
	<ul> <li>1 Hz blinking = Battery level &lt; 10%</li> </ul>
	<ul> <li>Slow blinking = Battery has been charged for 30 minutes</li> </ul>
	<ul> <li>Fast blinking = Battery has been charged for 24 hours</li> </ul>
BATT24	Yellow LED - indicates the status/level of the 24 V battery
	<ul> <li>ON = Normal operation</li> </ul>
	<ul> <li>1 Hz blinking = Battery level &lt; 10 %</li> </ul>
	<ul> <li>Slow blinking = Battery has been charged for 30 minutes</li> </ul>
	<ul> <li>Fast blinking = Battery has been charged for 24 hours</li> </ul>
CAN	Red LED - indicates transmission errors on I2C/CAN bus to SMICFC2x
PWR	Green LED - indicates that 24 V-NGL power or battery supply to SEM3x PCBA is OK
NOK	Red LED - indicates errors on SEM3x PCBA = SEM3x either not working or reset in progress
AC	Red LED - indicates that mains power to SEM3x PCBA is missing
DWLD	Yellow LED - indicates that a download to microcontroller is in progress
EVAC	Green or red LED - green indicates that evacuation is fully operational - red indicates that evacuation is possible but the SEM3x PCBA needs to be replaced as soon as possible
BOOST	Yellow LED - indicates that the booster output voltage (PEBO) is OK
JEM ON	Yellow LED inside DEM pushbutton - flashing indicates that the JEM switch is set to ON (evacuation enabled)

# 4.9.2.2 Access to Control Parameters (Menu 40) Configuration (Parameter Setup)

Main Menu 40



#### Main Menu 40 - Configuration [228593; 26.07.2017]

- 1 Menu entry point (indicating car position xx)
- 2 Main menus (10, 20, 30, etc.)
- 3 Activation of main menu 40 (configuration menu CF)
- 4 Configuration groups (within configuration menu CF only)
- 5 Special case within main menu 40: configuration groups CF40, CF41
- 6 Floor level (CF40, CF41 only)
- 7 Door side (only in case of independent doors, CF40, CF41 only)
- 8 Parameter (within selected configuration group)
- 9 Value (of the selected parameter)
- 10 Special case within main menu 40: LOP configuration (CF00)
- 11 Floor level (CF00 only)

# Meaning of the Abbreviation

Menu Element	Description		
CF	Configuration group, applies to main menu 40 only		
PA	Submenu: Parameter		
L	<ul> <li>Submenu: Level</li> <li>Applies to CF40 and CF41 only</li> <li>"L00" → All floor levels, "L01" → Floor level 1, "L02" → Floor level 2, etc.</li> </ul>		

Menu Element	Description		
S	Submenu: Door side		
	<ul> <li>Only visible in case of independent door operation (ZZ2 or ZZ3 on the SIM card)</li> </ul>		
	<ul> <li>Applies to CF40 and CF41 only</li> </ul>		
	- "S 1" → Door side 1, "S 2" → Door side 2		
LE	Submenu: Level, applies to CF00 only		
VL	Value		

Set	the
Cor	figurations
Мос	de

Pos.	Description and Remarks	Display
1	Check the HMI for the current car position (for example car at floor 5).	05
2	Press the OK button to enter the main menu level.	10
3	Press the UP or DOWN button as required to navigate to the desired main menu (for example main menu 40).	40
4	Press the OK button to confirm the main menu selection.	400
5	Press the UP or DOWN button as required to change the value from "0" to "1" (applies to main menu 40 only).	401
6	Press the OK button to activate the configuration mode (applies to main menu 40 only).	CF01
	This will:	
	<ul> <li>Display the configuration group CF01.</li> </ul>	
	<ul> <li>Send the car to the configuration floor, where it remains stationary with the doors open. The system is then ready for configuration.</li> </ul>	

Change	Daramoto
Change	Parameter

Pos.	Description and Remarks	
1	Make sure that the system is ready for configuration.	CF01
	Enter Configuration Mode as described above if applicable.	
2	Press the UP or DOWN button as required to navigate to the desired configuration group (for example Door Timing CF03).	CF03
3	Press the OK button to confirm the configuration group selection.	PA01
	This will display the first parameter of the parameter menu.	
4	Press the UP or DOWN button as required to navigate to the desired parameter (for example Start Delay PA08).	PA08
5	Press the OK button to confirm the parameter selection.	V L _ x y z
	This will display the current value xyz of the selected parameter.	
6	Press the OK button to enter Edit Mode (Change Mode).	V L _ x y z
	The first digit from the left will start blinking to indicate that it can be changed.	
7	<ul> <li>Either press the UP or DOWN button as required to change the digit to the desired value (for example x to u)</li> <li>Or go directly to the next step.</li> </ul>	V L _ u y z

	Pos.	Description and Remarks	
	8	Press the OK button to confirm the displayed value (changed or not) of the digit.	V L _ u v w
		This will enable the next digit for modification (which is then shown blinking)	
	9	Repeat the two preceding steps until all digits are through.	PA08
		Finishing with the last digit will display the parameter again.	
Exit the			
Configuration Mode	Pos.	Description and Remarks	
U	1	Press the ESC button as required to navigate back to the Configuration Mode activation.	4 0 1
	2	Press the UP or DOWN button as required to change the value from "1" to "0" (applies to main menu 40 only).	400
	3	Press the OK button to confirm the deactivation of the Configuration Mode.	40
	4	Press the ESC button to exit the main menu level.	05
		The HMI will display the current car position again (for	
4.9.3 **Reset and Synchronization Travel** 

#### 4.9.3.1 **Reset Procedure**

### **Normal Reset on Control**

### **RESET Button on** SMICHMI2x



[604639\_009; 23.08.2017]

- DRZS locking device (only for SMICHMI21) SIM card А
- 1
- 2 MM card

### Normal Reset - Car Top

Using Inspection Panel Top of Car (REC)

Using Inspection

Panel in Pit (RESG)



It is possible to reset the control with help of the inspection panel on top of car:

- JREC must be on position "INSPECTION"
- JHC stop button must be pressed

 $\rightarrow$  Press the ENABLE, UP and DOWN buttons (DREC-E, DREC-U and DREC-D) simultaneously.

This will reset the elevator control.

### Normal Reset - in Pit



[604639\_019; 26.07.2017]

It is possible to reset the control with help of the inspection panel in pit:

- JREC must be on position "INSPECTION"
- JHC stop button must be pressed

 $\rightarrow$  Press the ENABLE, UP and DOWN buttons (DRESG-E, DRESG-U and DRESG-D) simultaneously.

This will reset the elevator control.

### **Persistent Fatal Rest**

No	Step			
1	On HMI dispatch a fatal error reset command to ACVF and control with specia command 101.			
	This clears persistent fatal errors related to pre-opening, releveling, KB/KB1, safety circuit, PHSx bridging.			
2	Press the "RESET" button on the SCPU PCBA.			
	Reaction:			
	<ul> <li>The elevator starts up and performs a synch travel.</li> </ul>			
	This procedure clears:			
	<ul> <li>Persistent fatal error of the bionic control (pre-opening, re-leveling, KSE, KNE, PHSx bridged, safety circuit)</li> </ul>			
	<ul> <li>Persistent fatal error of the ACVF (for example KB/KB1)</li> </ul>			
	<ul> <li>Activated fire service, activated firefighter floor.</li> </ul>			
	<ul> <li>Door lock monitoring condition</li> </ul>			





### 4.9.3.2 Synchronization Travel

The elevator uses the synchronization mode to initialize the shaft information. A synchronization travel will be triggered automatically in the following situations:

- at system power up
- after reset
- after inspection travel
- after installation travel mode
- when a hoistway information recoverable error has occurred

The synchronization travel sequence will differ depending on the starting position of the car. At the end of the synchronization trip, the car remains stationary at the lowest level and the system returns to normal operation.

### 4.9.4 Fixtures Keypad Configuration

### 4.9.4.1 FI GS100 COP Configuration

FI GS100 1-N keypad COP



[43402603\_013; 28.07.2017]

Step	Procedure
1	Enter the configuration mode menu 40.
2	Choose CF15, PA1
3	The HMI displays [CF15]. The COP beeps once and shows "FL" and "n". ("n" stands for the floor which is ready to configure).
	The COP 1-N keypad configuration starts always with the lowest floor.
4	Press the corresponding push button of the floor which is displayed on the COP
5	Press "DT-O" to confirm your choice
6	The COP shows "Ac". The push button is configured
7	Press "DT-O" to continue with the next higher floor
8	Repeat the steps 3 7 for all the next higher floor levels (1 $\rightarrow$ 2 $\rightarrow$ 3, etc.)

### FI GS100 10 keypad COP

FI GS 10 keypad COP will be configured automatically after COP detection (Menu 129).

### 4.9.4.2 FI GS100 LOP Configuration

CO BIC7 uses FI GS fixtures LOP/LIN and LCUs for Biobus extension. It is mandatory to configure LOP/LIP/LCUs via COP, in order each has a unique address.

The LOP configuration consists of two steps, and before entering configuration, the COP button need to be teach with CF15.

- Step 1: LOP addressing
- Step 2: LOP counting

### Step 1: LOP addressing [LE - -]



Step	Procedure
7	Press the DT-O to confirm the correct configuration of the just configured LOP. The COP answers with a beep.
	$\rightarrow$ The CPID shows "LE" again.
	$\rightarrow$ The ACID shows next floor up.
0	Papart the LOP configuration stops for each floor and each door side

- 8 Repeat the LOP configuration steps for each floor and each door side.
- **9** When all floors are configured, disable the configuration mode.
  - This starts the LOP counting automatically.

## Step 2: LOP counting [LC \_ \_ ]

- LOP counting should start automatically after each LOP addressing in CF00 or after some configuration changes (CF40 or CF 60-80) on a BIO bus node. If it does not start automatically, it must be started manually.
- Manual LOP counting must also be performed after replacing the microprocessor PCB. To manually do the LOP count via COP, select CF 00, press DTO, press 0 and DTO again. The COP shows "LC" during the LOP count.



[25822; 13.02.2008]

No	User Interaction	Н	MI
1	Enter configuration mode menu 40.		
2	Choose CF00 and confirm with "OK".	LE	
3	Change with the UP/DOWN button to [LE 00]	LE	00
4	Press "OK". LC		
	$\rightarrow$ LOP counting is indicated by blinking [LC ]. This can take up to several minutes.		
5	After LOP counting is finished leave configuration mode by	40	1
	pressing "ESC" and by deactivating menu 40.	40	0
	(Change [40 1] to [40 0] and press "OK")	40	

### 4.9.5 Error Codes

The following list of error codes cover all control and software variants. Some errors are for Research and Development only and therefore not relevant.

### Error Messages and Recovery Procedures (related to Menu 50)

Some recoverable errors are reclassified as "fatal error" if they occur repeatedly. This is indicated in the following tables as shown in the example below. Example: "3x = F" means that **three** occurrences of the respective recoverable error **within one hour** make it a fatal error.

### Legend:

- **C1, C2, C3, ...**: Cause 1, 2, 3, ... of the error
- A1, A2, A3, ...: Action 1, 2, 3, ... to solve the error
- Any error displayed during the calibration belongs to error group 11. (Example: er 9 = Error 1109)
- Errors (E0–E9) displayed during the LOP configuration are described in chapter about the LOP configuration.

#### Code

0001

### General Message

### ELEVATOR FATAL ERROR

The elevator is permanently blocked and not operable. Note that this message typically follows another error.

#### C1:Different causes

A1:Check elevator message log for previous reported messages in order to identify the root cause of the problem.

### **ELEVATOR SAFETY CHAIN**

The safety circuit has opened unexpected or hasn't closed as expected.

C1:The safety circuit has opened unexpected (for example, while the car was moving)

A1:Check safety circuit for opened contacts.Check 110 V fuse on SMICHMI/SMICFC board.

0002 C2:Safety chain has not closed when expected. When all doors are closed, the safety circuit is expected to be closed too.

A2:Check safety circuit contacts at door.Check door parameter 'delay time between door closed and closed safety circuit' (CF03 PA13).

C3:Safety chain is not powered due to UCM (unintended car movement) actuation.

A3:Check UCM recovery procedures (for example, remove persistent fatal error).

### ELEVATOR OVERLOAD MODE

C1:Too high load in the car

0003 A1:Decrease the load in the car

### C2:The car load measuring signal is faulty

A2:Check general wiring to the car load measuring device.Redo calibration if signal is present but invalid.

- 0005 ELEVATOR POWER FAIL MODE
- 0008 ELEVATOR JRVC MODE \*)

Code	General Message		
	ELEVATOR NOAUTHORIZATION MODE		
	The elevator is blocked because no or an invalid SIM card is inserted at the elevator main control board (PCB).		
0012	C1:No SIM card, no Schindler SIM card, a SIM card of another elevator or a manipulated SIM card is inserted		
	A1:Check if SIM card is present or if a invalid SIM card is inserted. Check error log for SIM card errors (#19xx). Get the correct SIM card.		
	ELEVATOR REVISION NUMBERS DO NOT MATCH		
0017	C1:SIM card available, but internal COMM number doesn't correspond with the one stored in the SCIC EEPROM. Wrong SIM card delivery or SCIC already used in another elevator.		
	A1:Replace with SIM card that is dedicated (specially configured) for this installation. Install SCIC <=> SIM card combination that is foreseen for this installation.		
	ELEVATOR CHIP CARD DATA INTEGRITY FAILURE		
0018	C1:The SIM card could be read but the data is corrupt (wrong file length, crc etc.)		
	A1:Change the SimCard.		
	ELEVATOR WATCHDOG RESET		
0019	Indicates that a watchdog reset (initiated by hardware or software watchdog) has been performed previously. The elevator main control has just started up.		
	C1:A main controller software internal problem has occurred		
	A1:Update main controller with new software release (Only if advised by R&D. Get in contact with Locarno before.)		
	ELEVATOR S CHAIN BRIDGED PERMANENT		
0020	Safety circuit not opened at the time when expected to be opened (for example, while opening door)		
	C1:The safety circuit is bridged (for example, at the car or landing door) A1:Check safety circuit for bridges (for example, plugs) and remove them		
0021	ELEVATOR CAR CONTROLLER RESET		
	Elevator car controller reset		
0022	ELEVATOR CAR CONTROLLER RELEVELING FAIL		
0022	A1:Check: SUET		
0023	ELEVATOR ISK FAIL ON PREOPEN *)		
	This error is not used anymore with actual SW		
	ELEVATOR KNE U INTERRUPTED		
	C1:The car has exceeded the hoistway end limit (for example, KNE_U)		
0024	A1:Check why the car has exceeded the hoistway end limit. Check log for possible previous reported messages. Release elevator from blocked state (perform reset procedure)		
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted		
	A2:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section		
0025	ELEVATOR ISK PREOPEN ERROR *)		
0027	ELEVATOR CC RELEVELING FAIL FATAL *)		

### ELEVATOR USER LEVEL 3 DISABLED \*)

C1:The user has disabled the user level 3 by a command (for example, menu 109)

A1:None respectively possibility to enable the user level 3 for a second time (for example, menu 109)

C2:The elevator performed a auto disabling of the user level 3 for the first time (for example, if option "OEM" is active on SIM and more than 10'000 trips performed)

A2:Possibility to enable the user level 3 for a second time (for example, menu 109)

C3:The elevator performed a auto disabling of the user level 3 for the second and last time (after re-enabling, for example, after additional 2000 trips)

A3:none

Code

0031

### ELEVATOR LEARNING INTERRUPTED

The learning travel has failed.

C1:Wrong manipulation on elevator. For example, Recall switched on or any stop switch pressed during learning travel.

A1:Release corresponding switches. Re-execute the learning travel.

C2:Safety circuit opened

A2:Check reason for open safety circuit and get rid of the problem. Reexecute the learning travel.

### **ELEVATOR STARTED UP**

This message is stored in the error history every time the elevator has been started up. (For example after switching off / on the power supply.)

### C1:The power got switched off and on again

A1:None

# 0033 C2:The reset button got pressed

A2:None

C3:A watchdog reset got performed

A3:Check first power supply (quality) and possible reset by other staff. If message appears unexpectedly update the main controller with new software release. (Contact the Hotline Locarno)

### **ELEVATOR COP HEARTBEAT MISSING**

The communication to the cop respectively car user interface node has broken

### C1:COP disconnected

A1:Connect COP

### 0037 C2:Data transmission faulty

A2:Check data line connection (CAN). Check for correct data line termination (termination switch in ECU or control cabinet, termination in ACVF)

C3:Mismatch of car node software and elevator main controller software A3:Update the software accordingly

Code	General Message		
	ELEVATOR ECU HEARTBEAT MISSING		
	The car user interface node (COP) has recognized a lost of communication to the elevator main control. Note: This error mainly occurs together with other errors. Please check message log first for other reported errors.		
	C1:COP disconnected		
0038	A1:Connect COP		
0038	C2:Data transmission faulty		
	A2:Check data line connection (CAN). Check for correct data line termination (termination switch in ECU or control cabinet, termination in ACVF)		
	C3:Mismatch of car node software and elevator main controller software		
	A3:Update the software accordingly		
	ELEVATOR BACKUP BAT SUFFICIENT CHARGE		
0062	This informative error message indicates the charge of the elevator backup battery has resumed to the required minimum level.		
	C1:		
	A1:No action required		
	ELEVATOR BACKUP BAT INSUFFICIENT CHARGE		
	The charge of the elevator backup battery has fallen below the required minimum level or was not able to get recharged to the required minimum level after elevator mains power up.		
	C1:Battery connection missing or bad		
0063	A1:Check connections of the battery		
	C2:Battery faulty (for example, old)		
	A2:Replace battery		
	C3:Battery charging problem		
	A3:Check wiring to charging device. Check function of charging device (charging voltage, fuses).		
	ELEVATOR BACKUP BAT CAR INSUFFICIENT CHARGE		
	The charge of the car backup battery (for example, used to power the car backup light) has fallen below the required minimum level or wasn't able to get recharged to the required minimum level after elevator mains power up.		
	C1:Battery connection missing or bad		
0072	A1:Check battery's connections		
	C2:Battery faulty (for example, old)		
	A2:Replace battery		
	C3:Battery charging problem		
	A3:Check wiring to charging device. Check function of charging device (charging voltage, fuses).		
	ELEVATOR BACKUP BAT CAR SUFFICIENT CHARGE *)		
0073	In the course of a car backup battery failure, this (informative) error message is created to indicate that the car backup battery is again in working order.		
	C1: A1:No action required		

### General Message

### ELEVATOR TRACTION MEANS TEMP EXCEEDED

The temperature of the elevator traction means (for example, belts) has exceeded the allowable operating temperature

C1:Too hot ambient air temperature (temperature in hoistway)

A1:Wait for cool down

Code

C2:The temperature feedback signal (for example, KTHS) is faulty A2:Check general wiring to temperature sensor

C3:The heat dissipation is not working

A3:Check operation of heat dissipation device (for example, fan or forced ventilation) if present

### **ELEVATOR CAR LIGHT BROKEN**

The car light has broken. Recognized by the alarm button backlight which is switched on continuously.

### C1:The car light is broken.

A1:Replace car light and verify that the COP alarm button backlight, when available, is properly switched off

C2:The car light sensor on COP is defective

0076 A2:Check car light sensor on COP for proper working. Illuminating the sensor should switch the alarm button backlight off, covering the sensor should switch the alarm button backlight on.

C3:A light absorbing or dark car interior cladding has been installed after commissioning and the available light is not enough to activate the sensor.

A3:If the car light condition is OK perform again a learning trip to check and store the new working condition of the sensor. (if light is not enough the error 0077 might be reported)

### **ELEVATOR NO CAR LIGHT SENSOR**

Car light sensor not detected

C1:During learning trip the COP car light sensor is reporting erratic values or is reporting light switched off.

0077 A1:Check proper working of car light. Check that the backlight of the COP alarm button lights up when light sensor covered and switches off when light sensor illuminated. If light is considered to be working correctly ignore the error (the car light monitoring will remain disabledno error 0076 will ever be generated)

### **ELEVATOR CAR LIGHT OK**

Whenever the controller notices that the car light is broken, it sends an ELEVATOR CAR LIGHT BROKEN event. Once the light is working again, it signals it with an ELEVATOR CAR LIGHT OK event.

C1:

A1:No action required

### **ELEVATOR CAR BLOCKED \*)**

0079 The car was blocked in down direction.

A1:Elevator recovers automatically from this error by user (or recall) traveling in up-direction

0080 ELEVATOR CAR EMERGENCY EXIT MISUSE DETECTED

The controller detects a misuse of the emergency exit trap.

Code	General Message
0091	ELEVATOR KNE D INTERRUPTED
	C1:The car has exceeded the hoistway end limit (for example, KNE_D)
	A1:Check why the car has exceeded the hoistway end limit. Check log for possible previous reported messages. Release elevator from blocked state (perform reset procedure)
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A2:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section
	DIAGNOSTIC CALL *)
0099	This (informative) error message is created when the logging of a diagnostics- related message requires a call to TACC. It has to be used with some old telemonitoring devices in order to be able to initiate the call to TACC.

C1:

### A1:No action required

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

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### DOOR MAX LOCK TIME

A door was for a too long period of time in locked position. Note that monitoring the time the door is in locked position prevents the motor from burning. Note that this error might occur while the car is moving slowly (for example, during learning travel or emergency power recall travel)

### C1:Parameter 'max door lock time' is set wrong

### A1:Check corresponding parameter (CF03 PA07)

### DOOR KSKB

The door wasn't able to close successfully due to an mechanical blockade. This error occurs once if the door has tried to close for more than 50 times and the closing got always aborted due to an activated door closing force limiter (KSKB). The elevator gets blocked if this error appears too often within a certain time period (typically 7 times in 3 hours = 350 attempts/3 h).

0304

Code

### C1:Obstructions/barriers in the door zone or in the slit/gap

### A1:Remove obstacle

C2:Door closing force limiter feedback signal KSKB is faulty

A2:Check contact KSKB for dirt or bad mechanical adjustment. Check general wiring KSKB.

DOOR CLOSED WITH WRONG COMMAND \*)

C1:(1) No DOOR\_CMD = DOOR\_CLOSE/ DOOR\_LOCK given (2) Door is not reversing (3) KET\_S gets active (4) doorState=stopped=motor off

# A1:

- mismatched KET\_S and KET\_O
  - the direction of the motor is wrong
  - the door is reversed just before reaching KET\_S but the door reaches this contact because of inertia
  - the motor can be connected invert

### DOOR SHAFT ERROR

The subsystem door has received a door open command while the car is not detected to be on floor. The command is rejected.

### C1:Different causes

0313 A1:Check elevator message log for previous reported messages in order to identify the root cause of the problem.

C2:Failure at door zone detection of hoistway information system

A2:Check door zone detection of hoistway information system (for example, PHSx, mechanical adjustment, defective sensor etc.)

### DOOR PRE-OPENING

There was an activation or deactivation failure of the door safety circuit bypass device while the elevator was intended to perform a door pre-opening.

C1:Wiring of door safety circuit bypass device faulty

A1:Check general wiring of door safety circuit bypass device

# 0314 C2:Door zone detection faulty

A2:Check door zone signals and sensors (for example, PHSx, PHUETx).Check position of door unlocking zone indicators in hoistway (for example, vanes on same level)

C3:Failure at door safety circuit (KTS, KTC) bypass device

A3:Replace PCB containing this bypass mechanism (for example, SUET)

Code	e Car Door Message		
	DOOR NOT RECOVERABLE		
0315	The door wasn't able to recover from a door opening or door closing error (typically after 20 repetitive opening and closing attempts). The elevator is blocked.		
0315	C1:Door has a problem causing repetitive 'door opening' or 'door closing' errors.		
	A1:Check why door cannot recover.Check errors 0301 and 0302 for cause and actions.		
0316	DOOR HEARTBEAT ERROR		
	The communication to the door node respectively car node (controller) has broken		
	C1:Door node respectively car node disconnected		
	A1:Reconnect node		
	C2:No or bad door node respectively car node power supply		
	A2:Check node power supply		
	C3:Data transmission faulty		
	A3:Check general data line connection.Check for correct data line termination (if present) of all devices connected to the data bus.Check shielding of data line (if present).Check for EMC disturbances.		
	DOOR UNEXPECTED STATE		
0217	C1:If EC receives a door state sequence LOCKED -> CLOSED something is wrong with the door subsystem.		
0317	A1:Check: power supply of SDIC7x for loose connection		
	C2:It triggers door heartbeat service and sets the SDIC7x in error state.		
	C3:Possible mismatch of SW-Versions.		
	DOOR SDIC7x HEARTBEAT		
	C1:The SDIC7x is missing SCIC heartbeat and enters in error state.The SDIC7x sends this message.		
0318	A1:Check CAN bus cable and CAN bus cable termination on all subsystems (SCIC, SDIC7x, SEM3x, FC, COP).		
0310	A2:Possible mismatch of SW-Versions.		
	C3:Manual reset on SCIC / SCPU. This error occurs every time a manual reset has been performed by the technician. (For some seconds the SDIC7x does not receive the CAN bus signal anymore.)		
	A3:None		
	DOOR D1 DOD DIP WRONG		
0333	This error does not apply to Schindler 3100/3300/6300		
	A1:Check: Door 1 DOD DIP switches configuration.		
	DOOR D2 DOD DIP WRONG		
0334	This error does not apply to Schindler 3100/3300/6300		
	A1:Check: Door 2 DOD DIP switches configuration.		
0335	DOOR KSPT		
	A1:Check: KSPT		
0226	DOOR OVERTEMPERATURE		
0330	A1:Check: Door motor, Check: obstacles in door zone slit/ gap		

Code	Car Door Message	
0337	DOOR SUET BOARD DISCONNECTED	
	A1:Check: SUET connection	
0338	DOOR SUET ERROR1 OVERBRIDGING ACTIVATION UNSUCCESSFUL	
	A1:Check: SUET board	
	DOOR SUET ERROR2 OVERBRIDGING LOST	
	The elevator has recognized an unexpected deactivation of the door safety circuit bypass. Note that this overbridging is activated during re-leveling or advanced door opening (pre-opening).	
	C1:Door zone detection faulty	
	A1:Check door zone signals and sensors (for example, PHSx, PHUETx).	
0339	C2:A door safety circuit bypass feedback signal (for example, IUET, RFUET) is faulty	
	A2:Check general wiring at door safety circuit bypass device (for example, SUET)	
	C3:The car has unintentionally left the door zone while the door safety circuit was bypassed	
	A3:Check why the car has left the door zone	
	C4:Failure at door safety circuit bypass device	
	A4:Replace corresponding device (for example, SUET)	
0340	DOOR SUET ERROR3 OVERBRIDGING DEACTIVATION UNSUCCESSFUL	
0340	A1:Check: SUET board	
	DOOR RPHT SIGNAL BLOCKED ACTIVE	
	This error message is logged when the RPHT error counter reached its limit value (for example, PPHT signal got active while the door was closed).	
0341	C1:Sticker on the photo cell	
	A1:Remove sticker	
	C2:Photo cell defect	
	A2:Check photo cell, replace it if necessary	
	DOOR RPHT SIGNAL RECOVERED NORMAL OPERATION	
0342	The RPHT signal has recovered, the RPHT signal is inactive in the state door closed	
0343	DOOR SUET ERROR4 OVERBRIDGED WITHOUT ACTIVATION *)	
	DOOR RPHT SIGNAL BLOCKED INACTIVE	
0344	There was a failure of the door safety circuit bypass Note: This bypass is activated during re leveling or advanced door opening (pre opening)	
0345	DOOR DESTRUCTIVE OVERTEMPERATURE	
	The door drive (motor) has exceeded its the destructive over-temperature limit	
0351	<b>DOOR POSITION RECOVERY SUCCESSFUL</b> The door was able to recover from a position problem	

Code		Car Door Message		
0355	DOOR UNLC	OCK MISUSE DETECTED		
	A misuse of the landing door is detected and not permitted: elevator stops any activity. For Russia market. A manual intervention is required for bring back in operation the elevator.			
0333	C1:Door loc	k monitoring signalize an error		
	A1:Check if monitoring. landing door	nobody is in the shaft or on the car roof. Rearm the If the error appears again inspect correct closure of every		
0364	DOOR DRIV	E NO POWER SUPPLY		
	The door is u	navailable due to loss of power supply of the door drive		
	DOOR DRIV	E INSPECTION MODE ACTIVATED		
0366	Door drive ins installation m	spection mode is activated when not in inspection operation or ode		
	DOOR DRIV	E INTERNAL WARNING		
0367	The door driv operation, po	e detected an internal fault which permits to continue the door ssibly with reduced performance		
HE		Error		
0x0	9 09	Command unknown		
0x0	<b>C</b> 12	Wrong motion direction		
0x2	<b>0</b> 32	KET-S2 failure		
0x2	<b>2</b> 34	Motor over temperature		
0x2	4 36	CAN messages too fast		
0x2	<b>8</b> 40	NGT 24 VDC over 5 % limit		
0x2	<b>9</b> 41	NGT 24 VDC under 5 % limit		
0x3	<b>C</b> 60	CAN heartbeat missing from EC		
		Door Drive Error Code		
Code		Door Drive Message		
0368	DOOR DRIV	E INTERNAL FAILURE		
	The door is u	navailable due to a severe internal failure of the door drive		
HEX	K DEC	Error		
0x2	Δ <u>4</u> 2	NGT 24 VDC over 10 % Limit		

0x2A	42	NGT 24 VDC over 10 % Limit
0x2B	43	NGT 24 VDC under 10 % Limit
0x23	35	Auto setup failed
0x31	49	Over current
0x32	50	Over voltage
0x33	51	Under voltage (should never occur)
0x37	55	Internal software
0x38	56	Software internal parameter
0x39	57	Sensor position
0x3A	58	CAN overrun

HEX	DEC	Error
0x3D	61	CAN Tx COB Id_Collision
0x3E	62	CAN PDO length too short
0x3F	63	CAN bus off
0x40	64	CAN Rx queue overflow
0x41	65	CAN Tx queue overflow
0x43	67	Position following
0x44	68	Hall sensor
0x45	69	Index processing
0x46	70	Encoder resolution
0x4A	74	Hall angle detection
0x4B	75	Software position limit
0x4C	76	Position sensor breach
0x4D	77	System overloaded

VARIDOOR35 Error Codes

ID	Possible Causes	Actions to be taken
1	0x2A 42 NGT 24 VDC over 10 % Limit 0x2B 43 NGT 24 VDC under 10 % Limit	Replace power supply
	Power supply voltage out of range	
2	0x31 49 over current Too high controller gains (velocity control parameter set, position control parameter set)	Run autosetup
3	0x31 49 Over current Profile acceleration and/or deceleration too high	<ul> <li>Run autosetup</li> <li>Reduce parameter 39_speed_close and 40_speed open</li> </ul>
4	0x32 50 Over voltage Too much energy is fed back from the motor during a deceleration phase	<ul> <li>Run autosetup</li> <li>Reduce parameter 39_speed_close and 40_speed open</li> </ul>
5	0x32 50 Over voltage The power supply is damaged	Replace power supply
6	0x32 50 Over voltage Oscillation of the mechanical system (mass/belt) that leads to energy pulsation of energy	<ul><li>Check belt tension</li><li>Run autosetup</li></ul>
7	0x38 56 Software internal parameter Extreme motion profile parameters	<ul> <li>Check if a parameter was changed recently. If yes, change it back to its default value</li> <li>Run autosetup</li> </ul>
8	0x38 56 Software internal parameter At startup the parameters are corrupted	<ul> <li>Set the parameter Nr. 169 SetParamToDef to value</li> <li>Run autosetup</li> <li>If no success replace DDE-VD35</li> </ul>

ID	Possible Causes	Actions to be taken
9	0x37 55 Internal software An unknown event set the door drive to a state where the determinate behavior of the system cannot be guaranteed anymore	Restart door drive by plugging off POWT and CANT (DOOR) on OKR
10	0x39 57 Sensor position The DDE-VD-35 encoder has encountered an error	<ul> <li>Reset the DDE-VD35 by shortly plugging off POWT and CANT (DOOR) on OKR</li> <li>Run autosetup</li> </ul>
11	0x3A 58 CAN overrun	Check CAN cable2. Check CAN Communication
12	0x3D 61 CAN Tx COB Id_Collision	
13	0x3E 62 CAN PDO length too short	
14	0x3F 63 CAN bus Off	
15	0x40 64 CAN Rx queue overflow	
16	0x41 65 CAN Tx queue overflow	
17	0x43 67 Position following an obstacle that slows down or stops the door (only possible if force limit detraction KSKB/KOKB) is disabled	Check for obstacles or blocking situations, challenge the application setting of KOKB, KSKB
18	0x43 67 Position following too high acceleration/deacceleration	Reduce parameter 39_speed_close and 40_speed open

Code	Car Door	Message		
0369	DOOR MAX OPENING FORCE EXCEEDED			
	The maximum door opening force was	exceeded		
ID	Possible Causes	Actions to be taken		
1	The door opening is obstructed by an obstacle	Check the doorway and remove any obstacles or dirt		
Code	Door Conta	act Message		
	DOOR CONTACT END CLOSING CL	OSED BRIDGED		
0370	The contact end door closing-closed bridged (KET-S2) of the door is not oper when the door reaches the opened position			
ID	Possible Causes	Actions to be taken		
1	The wiring of the contact KET-S2 is not correct	Check the wiring according to the schematics. If found wrong, correct		
2	The contact KET-S2 is overbridged	Remove jumper		
Code	Door Locki	ng Message		
0271	DOOR LOCKING UNLOCKING OBSTRUCTED			
0371	The clutch locking respectively unlocking motion is obstructed			

HE	X DI	EC		Error
0x2	<b>2A</b> 3	7 N	IGT 24 VDC over 10 %	Limit
0x2	2 <b>B</b> 3	8 N	IGT 24 VDC under 10 9	% Limit
0x2	<b>23</b> 3	9 A	uto setup failed	
			Error Coo	le
ID	Possible Causes			Actions to be taken
1	Mechanio	cal bloc	kage of the clutch	Check the clutch's mechanical condition. Try to lock and unlock the door by means of the HMI and examine the clutch mechanically
2	An obstacle or foreign object inside the clutch obstructs the clutch mechanism			<ul> <li>Remove any foreign object obstacle from the path the clutch has to move on</li> <li>Check the landing door lock if it is working properly</li> </ul>
3	If locking/unlocking jam only: Increased friction due to ageing or damage of the mechanical components of the clutch subsystem		ing jam only: n due to ageing or nechanical he clutch subsystem.	<ul><li>Check the mechanical fitness of the clutch subsystem</li><li>If necessary, replace clutch</li></ul>
4	lf unlocki Blocked	ng jam landing	only: door lock	Check the landing door lock if it is working properly.

### Code Door Contact Message

### DOOR CONTACT END CLOSING CSD NOT CLSG FREQUENTLY

**0373** The contact end door closing-closed bridged (KET-S2) of the door did not close several times in a row when the door reaches the closed position. After a power cycle the door will not be functional

ID	Possible Causes	Actions to be taken
1	Learned door end position wrong	Execute an auto setup of the door
2	Mechanical misalignment of the switch KET-S2	Check the mechanical adjustment of the KET-S2 switch
3	Wiring fault of the KET-S2 switch	Verify the wiring and repair if necessary
4	Broken KET-S2 switch	Replace the KET-S2 switch

### Code Door Contact Message

# DOOR CONTACT END CLOSING RECOVERY SUCCESS

The contact end door closing-closed (KET-S2) recovered from a failure

### DOOR FINAL TIMER

**0375** The final timer function has been executed Only valid for Japan's country code

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	Drive Subsystem Message
0401	DRIVE SAFETY CHAIN INTERRUPTED
	Safety circuit opened unexpected (for example, during trip)
	C1:Any safety device has tripped (safety circuit opened)
	A1:Check reason for tripping and resolve problem
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A2:Check general wiring safety circuit contacts
	E_DRIVE_TRIP_TOO_LONG
	The car hasn't reached the intended destination floor within the legal time limit (typically 45 s). This mechanism protects the driving mechanics in case of a blocked car. For example, at traction elevator, no damage of the ropes. For example, at hydraulic elevator, no damage of hydraulic jack/valves.
	C1:Car blocked or moving too slowly
0402	A1:Check for object in shaft blocking the car.Check car for obstruction (too much friction at guide rails).
	C2:Drive blocked or turning too slowly
	A2:Check if brake opens right.Check parameter nominal speed at drive.
	C3:Shaft information signal(s) faulty
	A3:Check shaft info wiring and it signals (PHS, KS/KS1, KSE/KSE_U/KSE_D,)
	DRIVE CONTACTORS FEEDBACK
0403	C1:One of the feedback inputs(1) did switch during traveling, or(2) did not switch after starting, or(3) did not switch after stopping.
0403	A1:Check: wiring. Check: for contactor fault or input fault in the circuit associated with the input?
	C2:Emergency stop?
	DRIVE DIRECTION ERROR
	C1:Wrong travel direction
0404	A1:Check: wiring. Check: why the drive doesn't generate sufficient torque
0404	C2:FA/ Open loop: Contactors feedback wrong
	C3:Closed loop: tacho defective or motor not energized and car moves slowly by unbalancing situation
	C4:Drive doesn't generate sufficient torque
0405	DRIVE SHAFT INFORMATION
0405	A1:Check: CAN cable, Check: CAN wiring

### Drive Subsystem Message

### DRIVE OVERTEMPERATURE

Drive overtemperature detected

C1:Drive motor, hydraulic pump, hydraulic oil, or hoistway overtemperature due too many trips per time unit or due to too hot ambient air temperature (for example, direct sunlight at glass shaft)

# A1:Wait for cool down

Code

C2:Drive overtemperature feedback signal KTHMH/KTHM is faulty A2:Check thermal contacts KTHMH/KTHM for right operation. Check general wiring KTHMH/KTHM.

C3:The ventilation (integrated fan at frequency converter or forced fan) is not working

A3:Check power supply and mechanics of fan

### DRIVE NOT READY DURING STANDSTILL

The drive (frequency converter, open loop) got technically unavailable while the car was standing still.

C1:Bad electrical connection from the drive frequency converter to the elevator main contactors connection board (MCCE board) (Not applicable for Schindler 3000)

### 0407 for Schindler 3000)

A1:Check corresponding cables and connectors (for example, the drive ready signal)

C2:General problem at the drive frequency converter

A2:Check the drive frequency converter local error log for detailed diagnostics. Replace the frequency converter if necessary.

### DRIVE NOT READY DURING TRIP

The drive (frequency converter, open loop) got technically unavailable while the car was moving.

0408 C1:See 0407

A1:See 0407

C2:See 0407

A2:See 0407

### DRIVE SPEED LIMIT EXCEEDED IN STANDBY

Every time before starting a new trip a consistency check of the signal indicating low speed (typically at v < 0.3 m/s) coming from the drive frequency converter (open loop) is performed. The error occurs if the signal is not active.

C1:Bad electrical connection from the drive frequency converter to the elevator main contactors connection board (MCCE board) (Not applicable for Schindler 3000)

# 0409 A1:Check corresponding cables and connectors (for example, the drive speed limit signal)

C2:Parameter 'speed limit' is set wrong

A2:Check parameter 'speed limit' at drive frequency converter

C3:See 0407

A3:See 0407.

Code	Drive Subsystem Message		
	DRIVE SPEED LIMIT EXCEEDED DURING SAFETYCHAIN BRIDGED		
	While the car is landing on a floor the signal indicating low speed (typically at $v < 0.3$ m/s) coming from the drive frequency converter (open loop) is expected to change once from inactive to active state. The error occurs if this signal has changed once to active state and changes back again to inactive state (meaning: The car speed has increased during landing). Note that the safety circuit at the door is overbridged at this point of time. Note that the elevator can get blocked if this error appears too many times within a specific period of time (typically > 3 times in 1 hour).		
0410	C1:See 0407		
	A1:See 0407		
	C2:Parameter 'speed limit' is set wrong		
	A2:Check parameter 'speed limit' at drive frequency converter		
	C3:Rope slip		
	A3:Check driving mechanics and traction		
	C4:See 0407, C2		
	A4:See 0407, A2		
	DRIVE MOTOR RESISTOR CONNECTION		
	At least one of the drive motor resistor connecting devices, used for a smooth trip start at two speed drives (resistor start-up), does not operate as expected.		
0411	C1:Any connecting device feedback signal (typically from contactor, for example, SWAHA, SWAFA) is faulty		
	A1:Check general wiring to drive motor resistor/coil connecting devices		
	C2:Any connecting device (for example, SWAHA, SWAFA) is faulty (for example, stuck contacts, burned coil of contactor)		
	A2:Replace corresponding connection device		
	DRIVE BRAKE MAX RELEVELING THRESHOLD EXCEEDED		
0421	Too many consecutive relevelings in the same direction occurred, indicating a slowly drifting car. A brake capability test is triggered.		
	DRIVE BRAKE CAPABILITY PERIODIC TEST DELAYED		
	The brake capability test has been delayed by 8 h due to higher prio services		
0422	Shall be possible to check the reason of the delayed test:		
•	− Load status $\ge$ 21 %		
	<ul> <li>Elevator status not in maintenance</li> </ul>		
	- Traffic status		
	DRIVE BRAKE CAPABILITY PERIODIC TEST ABORTED		
0422	The brake capability test has been postponed by 24 h because:		
0423	<ul> <li>Internal drive error</li> </ul>		

Test timeout

Code	Drive Subsys	stem Message		
	DRIVE BRAKE OPERATION PARTIA	L FAILURE *)		
	Partial failure detected at the mechanic	cal drive brake		
	C1:Any brake position feedback sig	nal (for example, KB/KB1) is faulty		
	A1:Check brake position sensors (for general wiring of brake position sen	or example, KB/KB1) for dirt. Check sors.		
	C2:The brake control circuit is faulty	/		
0430	A2:Check contactors controlling the SF).Check general wiring to brake a present (PCB).	e brake (for example, SB, RB, ctuator.Check brake module if		
	C3:Brake operates only partially			
	A3:Check brake supply voltage			
	C4:The brake is mechanically bad a	djusted		
	A4:Check for available field informa	tion. Replace brake if necessary.		
	DRIVE BRAKE OPERATION FATAL	FAILURE *)		
	Fatal failure detected at the mechanica	al drive brake		
	C1:Any brake position feedback signal (for example, KB/KB1) is faulty A1:Check brake position sensors (for example, KB/KB1) for dirt. Check general wiring of brake position sensors.			
	C2:The brake control circuit is faulty	/		
0431	A2:Check contactors controlling the brake (for example, SB, RB, SF).Check general wiring to brake actuator.Check brake module if present (PCB).			
	C3:See 0430			
	A3:See 0430			
	C4:See 0430			
	A4:See 0430			
	DRIVE MOTOR TEMPERATURE REC	OVERY SUCCESSFUL		
0436	The car drive was able to recover from machine	a temperature problem at the hoisting		
0451	DRIVE BRAKE SUPPLY VOLTAGE F	AILURE		
0.101	The elevator detected a supply voltage failure for the brake.			
0452	DRIVE TORQUE CALIBRATION TIME	EOUT *)		
0457	DRIVE SOFT STOP FEEDBACK WRONG			
0101	This error is reported in case the soft s	top feedback is not consistent.		
*) So m a specia	arked error descriptions are not release alist or the Locarno hotline for more info	d officially by R&D. If necessary, contact rmation.		
ID	Possible Causes	Actions to be taken		
1	MGB-T board disconnected	Check soft stop cabling		
2	Soft stop function enabled without hardware	Check soft stop enable parameter		

3 Soft stop hardware failure Replace soft stop hardware

Code	Drive Subsystem Message		
	DRIVE SOFT STOP TRANSITION FAIL		
0458	This error is reported in case the soft stop is enabled or disabled and the feedbacks do not change as expected.		
0.450	DRIVE SOFT STOP RECOVERY FAILURE		
0459	This error is reported in case the soft stop recovery action fails.		
	DRIVE SOFT STOP RECOVERY SUCCESS		
0460	This error is reported in case the soft stop recovery action is a success.		
0404	DRIVE SOFT STOP LOST		
0461	This error is reported in case the soft stop circuitry is not anymore detected.		
	DRIVE SOFT STOP DISCONNECTED		
0462	This error is reported in case the soft stop circuitry is disconnected and the function is disabled.		
	DRIVE SOFT STOP TRANSITION WHILE DISABLED		
0463	This error is reported in case the soft stop input changes state while the function is disabled.		
	DRIVE SOFT STOP DISABLED		
0464	This error is reported in case the soft stop is disabled and parameter is set t disabled.		
0466	DRIVE SOFT STOP SUPPLY LOST		
0466	This error is reported in case the soft stop supply is lost.		
0467	DRIVE SOFT STOP DOOR TEST FAIL		
0401	This error is reported in case the soft stop door HW test fails.		
0468	DRIVE SOFT STOP INSP TEST FAIL		
0400	This error is reported in case the soft stop inspection HW test fails.		
0469	DRIVE SOFT STOP+ FEEDBACK WRONG		
0403	This error is reported in case the soft stop+ feedback is not consistent.		
0470	DRIVE SOFT STOP+ UPS FAIL		
0470	The UPS reported a problem.		
	DRIVE UNKNOWN ERROR		
0499	An unknown error was detected by the controller (for example, unknown error of the ACVF was detected)		
Code	Car Load Cell Message		
	CLC NO FREQUENCY		
1101	No frequency from the car load measuring device		
	C1:No connection to the car load measuring device		
	A1:Check connections and general wiring to the car load measuring device (for example, CLC)		
	C2:Malfunction of the car load measuring device		
	A2:Replace the car load measuring device (for example, CLC)		
	C3:Malfunction of the car load signal receiving stage		
	6 6 6		

Code	Car Load Cell Message
1102	CLC WRONG VALUE
	The signal from the car load measuring device is present but invalid (for example, signal out of range)
	C1:The car load measuring device is mechanically bad adjusted
	A1:Check mechanical fixation of the car load measuring device
	C2:The car load measuring signal is faulty
	A2:Check general wiring to the car load measuring device.Check for EMC disturbances.
	C3:Malfunction of the car load measuring device
	A3:Replace the car load measuring device (for example, CLC)
	CLC CALIBRATION ERROR
1103	C1:Car load cell: during the calibration procedure an error occurred
	A1:Check: CLC wiring. Check: proper fixation of CLC. Check: parametrization of CLC. Redo: CLC calibration. Replace: CLC
	CLC OVERBRIDGED
1104	C1:DIP switch 1 on SCIC board in ON position (car load cell deactivated)
	A1:Check: Switch off DIP switch 1 on SCIC board. Check: HMI (control cabinet) menu 107
1105	CLC NO CALIBRATION *)
1105	The calibration of the CLC is not yet done.
	CLC OPERATION NOT SUPPORTED IN CURRENT STATE
1106	It's not possible to display the current car load on the user interface (control cabinet) while entering the configuration menus CF95, CF98 or CF99.
	C1:The car load measuring device is not calibrated
	A1:Calibrate the car load measuring device
	CLC OPERATION NOT SUPPORTED IN ERROR_STATE
1107	It's not possible to display the current car load on the user interface (control cabinet) while entering the configuration menus CF95, CF98 or CF99.
	C1:The car load measuring device is in error state (not working)
	A1:Check error log for previous reported car load measuring device errors.
	CLC OUT OF RANGE
	The signal from the car load measuring device is present but invalid (for example, signal out of range)
	C1:The car load measuring device is mechanically bad adjusted
	A1:Check mechanical fixation of the car load measuring device
	C2:The parameter car load measuring device type is set wrong and does
1108	A2:Check parameter car load measuring device type for correct setting
	(for example, CF08 PA08)
	C3:The car load measuring signal is faulty
	A3:Check general wiring to the car load measuring device.Check shielding (if present).Check power supply of car load measuring device.
	C4:Malfunction of the car load measuring device
	A4:Replace the car load measuring device

Code	Car Load Cell Message		
	CLC CALIBRATION ZERO LOAD FREQUENCY OUT OF RANGE		
	The zero car load calibration has failed due to invalid signal (frequency) from the car load measuring system		
	C1:The car load measuring device is mechanically bad adjusted		
	A1:Check mechanical fixation of the car load measuring device		
	C2:The parameter car load measuring device type is set wrong and does not correspond with the actual mounted car load measuring device		
1109	A2:Check parameter car load measuring device type for correct setting (for example, CF08 PA08)		
	C3:The car load measuring signal is faulty		
	A3:Check general wiring to the car load measuring device.Check for EMC disturbances.		
	C4:Incorrect working procedure while calibrating the car load measuring device		
	A4:Check for correct working procedure (for example, correct weight in car)		
	CLC CALIBRATION REFERENCE LOAD FREQUENCY OUT OF RANGE		
	The reference car load calibration has failed due to invalid signal (frequency) from the car load measuring system		
	C1:The car load measuring device is mechanically bad adjusted		
	A1:Check mechanical fixation of the car load measuring device		
	C2:The car load measuring signal is faulty		
1110	A2:Check general wiring to the car load measuring device.Check for EMC disturbances.		
	C3:Incorrect working procedure while calibrating the car load measuring device		
	A3:Check for correct working procedure (for example, correct weight in car)		
	C4:Malfunction of the car load measuring device		
	A4:Replace the car load measuring device		
	CLC CALIBRATION REFERENCE LOAD WEIGHT OUT OF RANGE		
1111	C1:Wrong reference load weight entered.		
	A1:Check: Reference load weight value. Redo: CLC calibration/ configuration		
	CLC CALIBRATION SLOPE OUT OF RANGE		
	C1:The car load measuring device is adjusted mechanically incorrectly.		
1112	A1:Check mechanical fixation of the car load measuring device. Redo: CLC calibration/ configuration		
	C2:Malfunction of the car load measuring device		
	A2:Check and replace the car load measuring device. Redo: CLC calibration/ configuration		
1113	CLC CALIBRATION RATED LOAD WEIGHT OUT OF RANGE		
	A1:Check: Rated load weight configuration file		
	LMS MULTIPLE SOURCE		
1133	Due to wrong configuration more than one source of load is provided to the controller (two frequencies or two open contacts)		

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	Frequency Converter Error Message
	FC OVERCURRENT
1501	The maximum current limit on one or more drive inverter output phases to the drive motor has exceeded
	C1:Short circuit in the motor cables or motor windings
	A1:Check power wires and connectors between drive inverter and drive motor.Check motor for short circuit at windings.
	C2:Driving mechanics inhibited or blocked
	A2:Check driving mechanics for blocking (for example, gear at geared drive, oiling) Check brake for proper opening.
	C3:Sudden heavy load increase
	A3:Check for impermissible loading
	C4:Drive parameter setting
	A4:Check drive parameter and compare with motor type and its data
	C5:Unsuitable drive motor
	A5:Check drive motor for correct dimensioning in the elevator system
	FC OVERVOLTAGE *)
	Overvoltage at the drive inverter internal DC link detected
1502	C1:Deceleration is too high
	A1:Adjust the deceleration (proposal 0.5 m/s2)
	C2:High over-voltage spikes at mains
	A2:Check mains voltage for disturbances and tolerances
	C3:Drive inverter electronics failure
	A3:Replace drive inverter
	FC EARTH FAULT
1503	The sum of the phase currents of the drive inverter output to the drive motor is not equal zero
	C1:Earth fault
	A1:Check power wires (insulation) to the motor. Check motor for short- circuit at motor windings
	C2:Creeping current
	A2:Check power wires (insulation) to the motor. Check motor for short- circuit at motor windings
	FC INVERTER FAULT
1504	C1:Vacon frequency converter has detected faulty operation in the gate drivers or IGBT bridge - interference fault (EMC)- component failure
	A1:- Reset the fault and restart. If the fault occurs again replace frequency converter.

Code	Frequency Converter Error Message
	FC CHARGING CONTACTOR
	The drive inverter has detected a operation failure at the internal DC link
	C1:EMC disturbances
1505	A1:Release elevator from blocking state (reset)
	C2:Drive inverter internal component (for example, charging contactor) defective
	A2:Replace drive inverter
1506	FC MC CURNT NOT ZERO
	The motor current at standstill is not zero
	FC UNDERVOLTAGE
	Undervoltage at the drive inverter internal DC link detected
	C1:Failure of the mains supply
1500	A1:Check mains voltage for disturbances (short breaks) and tolerances
1509	C2:Automatic evacuation was running
	A2:None, normal behavior
	C3:Drive inverter electronics failure
	A3:Replace drive inverter
	FC INPUT LINE SUPERVISION
	At least one phase of the drive power supply is missing or insufficient
	C1:No power supply
1510	A1:Check general wiring (connections).Check fuses.
	C2:Disturbed power supply
	A2:Check for other power consumers (for example, powered by the same line) which are decreasing the quality of the drive's power supply
	FC OUTPUT LINE SUPERVISION
	No current detected at one or more drive inverter output phases to the motor
1511	C1:Power connection between drive inverter and drive motor bad or missing
	A1:Check power wires and connectors between drive inverter and drive motor
	FC BRAKE CHOPPER SUPERVISION
1512	The braking chopper at the drive inverter is not working correctly
	C1:The brake resistor is not installed correctly
	A1:Check presence and wiring of brake resistor
	C2:The brake resistor is broken
	A2:Replace brake resistor
	C3:The brake chopper is broken
	A3:Replace drive inverter (FC)
1513	FC CONVERTER UNDER TEMPERATURE
	C1:Temperature of heat sink below 10C
	A1:none

### FC CONVERTER OVERTEMPERATURE

### C1:Temperature of heatsink over +75C

<sup>1514</sup> A1:Check: cooling air flow. Check: that sink is not dirty. Check: ambient temperature. Check: that switching frequency is not too high compared with ambient temperature and motor load

### FC MOTOR STALLED

Code

1516

1517

The load on the drive motor is too high (detected by current measurement on drive inverter output)

# C1:Driving mechanics inhibited or blocked

A1:Check driving mechanics for blocking (for example, gear at geared drive, oiling). Check brake for proper opening.

C2:Sudden heavy load increase

A2:Check for impermissible loading

### FC MOTOR OVERTEMPERATURE

C1:The Vacon frequency converter motor temperature model has detected motor overheat- motor is overloaded

A1:Check the THMH sensor on the ACVF. Check the cable connection. Verify the sensor is KTY type. Check: Decrease motor load. Check: the temperature model parameters if the motor was not overheated

### FC MOTOR UNDERLOAD

The load on the drive motor is too low (detected by current measurement on drive inverter output)

### C1:Driving mechanics broken

A1:Check driving mechanics for breakage (for example, gear at geared drive, ropes, etc.)

### FC ANALOGUE INPUT FAULT

C1:

- Wrong analogue input polarity
- 1518 Component failure on control board
  - Irrelevant for Schindler Closed Loop application

A1:Check: polarity of the analogue input, Check: replace frequency converter

### FC OPTION BOARD IDENTIFICATION

1519 C1:Reading the frequency converter option board has failed A1:Check: installation, if installation is correct replace frequency converter.

### FC 10V SUPPLY REFERENCE

1520 C1:+ 10 V reference shorted on control board or option board A1:Check: the cabling from +10V reference voltage

FC 24V SUPPLY

### 1521 C1:+ 24 V reference shorted on control board or option board A1:Check: the cabling from +24V reference voltage

Code	Frequency Converter Error Message
1522	FC EEPROM
	C1:Parameter restoring error- interference fault- component failure
	A1:Check: when fault is reset the Vacon frequency converter will automatically load parameter default settings.
	A2:Check: all costumer- specific parameter settings after confirmation and if necessary reload them.
	A3:Check: if the fault occurs again replace converter
	FC CHECKSUM
	C1:See 1522
1523	A1:See 1522
	A2:Check: all parameter settings after reset.
	A3:Check: if the fault occurs again replace frequency converter.
	FC MICROPROCESSOR WATCHDOG
1525	C1:- FC Microprocessor hangup- interference fault- component failure
	A1:Check: reset the fault and restart. Check: if fault occurs again replace frequency converter
	FC PANEL COMMUNICATION
1526	C1:The connection between panel and the Vacon frequency converter is not working
	A1:Check: the panel- FC interface cable
1527	<ul> <li>FC COMMUNICATION ERROR</li> <li>An error of internal communication of the drive inverter has occurred</li> <li>Internal serial communication error</li> </ul>
	Internal CAN communication error
1528	FC MC CURNT DIFF The control deviation of the current controller exceeds the supervisor parameter is_diff_lim
1529	FC THERMISTOR PROTECTION
	C1:- Thermistor input of the I/O-expander board has detected increase of the motor temperature- Irrelevant for Schindler Closed Loop application
	A1:Check: motor cooling and loading. Check: thermistor connection (if thermistor input of the expander board is not in use, it has to be bridged)

### Frequency Converter Error Message

### FC ENCODER PULSE MISSING

Invalid signal from the drive motor encoder

C1:Encoder signal is faulty

Code

### A1:Check general wiring to the encoder

C2:Encoder signal is noisy

A2:Check encoder signals for right termination (terminating resistor)

C3:Encoder signal receiving stage defective

A3:Replace electronics (for example, option board or even entire drive 1531 inverter) of corresponding device

C4:Encoder defective

A4:Replace encoder

C5:Drive Parameter set wrong

A5:Check drive parameter (for example, nominal frequency, impulse ratio etc.)

C6:The rotation direction signaled by the encoder (differential inputs) is contrary to the drive motor mains phase sequence

A6:Change encoder direction parameter (CF 16, PA 14)

### FC ENCODER DIRECTION \*)

Wrong rotation direction signal from the drive motor encoder

1532 C1:The rotation direction signaled by the drive motor encoder (differential inputs) is contrary to the drive motor mains phase sequence A1:Change encoder direction parameter (CF 16, PA 14)

### FC SPEED SUPERVISION

Too high difference between reference and actual car drive motor speed. The actual speed is derived from the incremental encoder information.

C1:Driving mechanics inhibited or even blocked

A1:Check brake for proper opening.Check driving mechanics for blocking (for example, gear at geared drive, oiling).Check for bad weight balancing of car and counterweight.

1533 C2:Motor or motor encoder parameter set wrong or speed limit parameter set too narrow

A2:Change corresponding parameter accordingly. Note that at some drives there are several limits dedicated for the different speeds like inspection speed, evacuation speed, etc. (for example, shaft speed limit/time, shaft service speed limit/time)

C3:Malfunction of drive motor rotation encoder

A3:Replace the encoder.

FC ANALOG INPUT UNDER CURRENT

C1:The current in the analog input line is below 4 mA.Signal source has failed.Control cable is broken.

A1:Check: mechanical break. Check: check the motor is not running on the current limit.Check: Increase Parameter 11.8 SpeedErrorLim without surpassing 1/3 of rated output frequency.

**1537 FC LN CHOKE OVERTEMPERATURE** Over temperature of line choke

# 1538 FC FAN ERROR

The fan of the inverter is not running

Code	Frequency Converter Error Message
	FC EXTERNAL FAULT
1541	C1:Fault is detected from external fault digital input
	A1:Check: the external fault circuit or device.
	FC TOO HIGH OR TOO LOW SPEED AT TARGET PHSx RISING
	Too high respectively too low car speed detected while the car is landing on floor
	C1:Malfunction of car position detection
	A1:Check hoistway information system (for example, vanes, PHS)
1542	C2:Bad balancing of car and counterweight
	A2:Check balancing according instruction manual (TK)
	C3:Too high traction slip
	A3:Check traction means for enough friction
	C4:Wear of traction means
	A4:Check traction means for wear
	FC WRONG PHSx SEQUENCE
1544	C1:FC has received a wrong PHSx logical signal sequence from the car processor - first PHSx is rising, last PHSx- rising missing- too rising or too falling PHSx signals one after each other has been received
	A1:Check: Car HW/ SW errors. Check: PHS light barriersCheck: PHS 1/2 supply. Check: EMI. Check: floor (level) flags
	C2:Car processor (SDIC7x) logical error
	A2:Check: PHS sensors and distances to floor level flags. Check: 24 V supply. Check: SDIC7x wiring. Check: SDIC7x board
1545	FC PF MISSING CAN AFE INU
	Missing internal CAN connection
1548	FC MOTOR CURRENT SUPERVISION
	C1:Motor current (in one or more phases) below expected value
	A1:Check: wiring between FC and output contactors, main contacts. Check: main contactors, main contacts. Check: wiring between output contactors and motor. Check: motor
1551	FC SPEED REFERENCE
	C1:Trying to change speed on the fly is not accepted by the FC. FC initiates an emergency stop.
	A1:Check: SCIC (S00x) software version (Logical error)
	C2:Elevator controller (EC) logical error.(new speed level= ZERO, EVACUATION or UNKNOWN)
1554	FC BRAKING RESISTOR OVERTEMPERATURE
	C1:FC (Close Loop) Braking resistor overtemperature
	A1:Check: Brake resistor temperature, wiring and/or the bi-metal itself

### **FC HEARTBEAT**

Code

The drive node has recognized a lost of communication to the elevator main control. Note that this error mainly occurs together with other errors. Please check message log first for other reported errors.

### C1:Drive node disconnected (for example, CAN bus)

### A1:Reconnect node

C2:Data transmission faulty (for example, CAN bus)

1555 A2:Check general data line connection.Check for correct data line termination (jumpers and switches, if present) of all devices (PCBs) connected to the data bus.Check shielding of data line (if present).Check for EMC disturbances.

C3:No or bad power supply of elevator main control

A3:Check power supply

C4:Elevator main control defective

A4:Replace corresponding hardware

### FC OUTPUT CONTACTORS SUPERVISOR PERSISTENT

One or more drive main contactor does not operate as expected.

C1:The contactor feedback signal is faulty

A1:Check on the service interface menu (for example, 723 or 30623) for the state of the contactor feedback signal.Check general wiring of contactor feedback signal (for example, to DIN1 and DIN2 of drive) Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.

C2:A contactor is defective (for example, contacts stuck together)

A2:Replace defective contactor (for example, SFx, SHx, SB). Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.

### 1556 C3:The contactor control electronics is defective

A3:Replace defective electronics (PCB, for example, MCCE). Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.

C4:Some drive types do not have a dedicated logical input (HW) reflecting the state of the safety circuit which is used to determine a failure at one of the drive main contactors. These drives are informed by a data telegram (for example, CAN) from the elevator main control about the state of the safety circuit. The safety circuit has opened but the mentioned telegram was not transferred.

A4:Check general data line connection.Check for correct data line termination (if present) of all devices connected to the data bus.Check shielding of data line (if present).Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.

Code	Frequency Converter Error Message
	FC OUTPUT CONTACTORS SUPERVISOR PERSISTENT
	One or more drive main contactor does not operate as expected. Note that this error message might be logged at certain drive types after opening of the safety circuit. In this case no real contactor error exists unless it is confirmed by subsequent logging of error 1556.
	C1:Safety circuit has opened
1557	A1:When the safety circuit has opened unexpectedly check elevator message log for previous reported messages in order to identify the root cause of the problem
	C2:The contactor feedback signal is faulty
	A2:Check on the service interface menu (for example, 723 or 30623) for the state of the contactor feedback signal.Check general wiring of contactor feedback signal (for example, to DIN1 and DIN2 of drive)
	C3:A contactor is defective (for example, contacts stuck together)
	A3:Replace defective contactor (for example, SFx, SHx)
1558	FC INTERNAL SK ERROR
1550	SK_Mon does not match the L_SK. (STEP only).
	FC POSITION CORRECTION
	C1:Too high position correction error requested by the EC.FC initiates an stop.
	A1:Check: Par. 11.2 PosCorrectLim and s-curve parameters (max. jerks, max. acceleration, rated speed).
1559	C2:Too high jerk and/ or acceleration values are used. (Par. 1.10, 1.11, 4.2, 4.3, 4.104.13).
	A2:Check: for the closed loop application the max. values for Par. 1.10, 1.11, 4.2, 4.3 4.104.13), that limit is imposed by the mechanics
	C3:Car ropes slips over the traction pulley
	A3:Check: elevator mechanics (brake, ropes, pulley, etc.)
	C4:EC shaft image
	FC MECHANICAL BRAKE KBKB1
	Failure of brake, detected at brake contact KB/KB1.
	C1:The brake position feedback signal(s) KB/KB1 is/are faulty
1564	A1:Check brake contact(s) KB/KB1 for dirt. Check general wiring KB/KB1.
	C2:Brake opens only partially
	A2:Check brake supply voltage
	C3:The brake is mechanically bad adjusted
	A3:Replace brake
1565	FC MECHANICAL BRAKE KB2 Failure of brake, detected at brake contact KB2
1566	FC PERIODIC BRAKE TEST FAILED
	Periodic brake capability test failed or brake capability test triggered by excessive releveling failed.
	The recovery from this fatal error requires clearing by setting the special command 164 to "1", followed by an elevator controller reset.

### Frequency Converter Error Message

### FC STANDSTILL

Code

1567

The drive inverter has detected a drive motor movement while it should be in standstill (brake in closed position)

C1:Drive brake does not close correctly

A1:Check drive brake (for example, temperature too high)

C2:Encoder signal is faulty

A2:Check general wiring to the encoder

C3:Encoder signal receiving stage defective

A3:Replace electronics (for example, option board or even entire drive inverter) of corresponding device

C4:Encoder defective

A4:Replace encoder

The recovery from this fatal error requires clearing by setting the special command 164 to "1", followed by an elevator controller reset.

### FC MECHANICAL BRAKE PERSISTENT

This error occurs if the drive has reported a KB/KB1 failure and the safety circuit does not open in consequence. This is an inconsistent and dangerous situation which would allow driving the car with a faulty break. The elevator is blocked.

### 1568 block

C1:Invalid drive frequency converter (FC) software installed

A1:Update software of drive frequency converter (FC) and the corresponding software on the elevator main controller (SCIC) (Contact first R&D Locarno or a specialist.)

### 1569 FC UF CURVE

### FC MECHANICAL BRAKE KB

Failure of brake, detected at brake contact KB.

### C1:The brake position feedback signal KB is faulty

### A1:Check brake contact KB for dirt.Check general wiring KB.

# 1570 C2:Brake opens only partially

A2:Check brake supply voltage

C3:The brake is mechanically bad adjusted

### A3:Replace brake

### FC MECHANICAL BRAKE KB1

Failure of brake, detected at brake contact KB1.

### C1:The brake position feedback signal KB1 is faulty

A1:Check brake contact KB1 for dirt. Check general wiring KB1.

### C2:Brake opens only partially

A2:Check brake supply voltage

C3:The brake is mechanically bad adjusted

A3:Replace brake

Code	Frequency Converter Error Message
1572	FC MECHANICAL BRAKE KBKB1 PERSISTENT FATAL
	Too many brake failures (KB and KB1) have occurred within a certain limit of trips (typically > 3 failures/100 trips). The elevator is blocked.
	C1:Brake power is missing
	A1:Check general wiring of brake power circuit
	C2:The brake position feedback signals KB and KB1 are faulty
	A2:Check on the service interface menu (for example, 724 or 30624) the states of the brake position feedback signals.Check brake contacts KB and KB1 for dirt.Check general wiring KB and KB1.
	C3:Brake opens only partially
	A3:Check brake supply voltage
	C4:The brake is mechanically bad adjusted
	A4:Replace brake
	FC MECHANICAL BRAKE KB PERSISTENT FATAL
1573	Too many brake failures (KB) have occurred within a certain limit of trips (typically > 3 failures/100 trips). The elevator is blocked.
	C1C4: See error 1572 (applied for KB)
	A1A4: See error 1572 (applied for KB)
	FC MECHANICAL BRAKE KB1 PERSISTENT FATAL
1574	Too many brake failures (KB1) have occurred within a certain limit of trips (typically > 3 failures/100 trips). The elevator is blocked.
	C1C4: See error 1572 (applied for KB1)
	A1A4: See error 1572 (applied for KB1)
	FC WRONG PHNRx SEQUENCE
	The drive frequency converter received a inconsistent relevel zone signal sequence from the shaft information system (for example, two times rising edge from PHNR_U or PHNR_D).
	C1:Bad alignment of the PHNR_U/PHNR_D sensors
	A1:Check positions of the PHNR_U/PHNR_D sensors
1575	C2:Dirt on vanes
	A2:Clean the vanes in the hoistway
	C3:Bad signals through external light source
	A3:Check proper shielding from sunlight (glass shaft)
	C4:Communication problem, EMC
	A4:Check communication on CAN bus (SDIC7x, SCIC)
	FC RELEVELING DISTANCE EXCEEDED
1576	The drive frequency converter (FC) wasn't able to level the car on the floor because the maximum relevel distance was exceeded.
	C1:Parameter 'max releveling distance' is set wrong
	A1:Check parameter 'max releveling distance' at drive frequency converter. The value should be 1.3 to 1.5 times bigger than the maximum allowed rope elongation at the specific installation.
	C2:Bad alignment/position of the PHNR_U/PHNR_D sensors
	A2:Check positions of the PHNR_U/PHNR_D sensors. Check that the displacement of the releveling sensors (PHNR_U/PHNR_D) is according to the schematics. They should be inactive when the car is about 15 mm below or above floor level.
#### FC RPM IDENT STOPPED

The learning procedure of the drive motor revolution parameter (RPM) was aborted.

C1:The fitter has cancelled the learning procedure by interaction on the user interface

A1:None

Code

1577 C2:Mal manipulation by the fitter. Two consecutive trips in the same direction have been initiated.

A2:Follow instruction J42101241 (V3 or later) 'Biodyn XX C/P BR Commissioning' or TK.

C3:The safety circuit has opened unexpectedly

A3:Check where safety circuit was opened. Get rid of the Problem. Restart the drive motor revolution parameter learning procedure.

#### FC RPM IDENT FAILED

The learning procedure of the drive motor revolution parameter (RPM) wasn't successful. It was aborted after 10 consecutive trip cycles (travel up and down). Note that no parameter will be overwritten.

C1:manipulation by the fitter. Different destinations per travel direction entered during the learning procedure.

A1:Follow instruction J42101241 (V3 or later) 'Biodyn XX C/P BR Commissioning' or TK.

C2:Wrong initial value of drive motor revolution parameter (CF16 PA38) set for the learning procedure.

1578 A2:Follow instruction J42101241 (V3 or later) 'Biodyn XX C/P BR Commissioning' or TK.

C3:The learning procedure wasn't able to bring the delta trip time (difference of the time measured at a trip in up and down direction) lower than a specific limit.

A3:Follow instruction J42101241 (V3 or later) 'Biodyn XX C/P BR Commissioning' or TK.

C4:The learning procedure wasn't able to bring the delta nominal speed (difference of the measured actual car speed compared with the reference car speed) lower than a specific limit.

A4:Follow instruction J42101241 (V3 or later) 'Biodyn XX C/P BR Commissioning' or TK.

FC IDENT LOW TORQUE

The learning procedure of the drive motor revolution parameter (RPM) has failed. It was aborted after one test cycle (travel up and down) because the needed torque measured by the system is not present. Note that no parameter will be overwritten.

1579 Will be overwritten.

C1:Bad car balancing or bad absence of general mechanical friction (system with low efficiency)

A1:Load car with nominal load. Restart the drive motor revolution parameter learning procedure.

#### FC LC CURNT DIFF

- **1580** The control deviation of the mains current controller exceeds the supervisor parameter im\_diff\_lim.
- **1581 FC IGBT OVERTEMPERATURE** Over temperature of the IGBT power module
- 1582 FC MC CURNT SUM FAILURE Current sum failure

Code	Frequency Converter Error Message
	FC MISSING SAFETY CHAIN SUPPLY
	During or while starting a trip (while the motor and brake contactors are activated) the drive has detected a interrupted safety circuit
	C1:Safety circuit signal is faulty
1580	A1:Check safety circuit wiring between elevator control and drive
1289	C2:The trip was started before the door has finished bouncing after reaching the closed position
	A2:Increase parameter start delay (menu CF 03)
	C3:JEM on PEBO (SNGL, SEM3x) is on wrong position
	A3:Switch JEM to position OFF
4502	FC NON DETERMINABLE PERS AT STARTUP
1593	The persistent error from FC has been lost due to startup sequence
1504	FC HW ERROR
1594	HW failure of the converter detected
4505	FC HW MISMATCH
1595	The configuration does not match with recognized hardware
1506	FC SW WARNING
1590	The software detected an exceptional behavior of the SW or the HW
1507	FC MEMORY ERROR
1597	Incorrect memory access
1500	FC PARAMETER INCONSISTENCY
1598	Parameter values out of range.
	FC INVERTER INTERNAL FAILURE
1599	The drive inverter has an internal problem. See extra info for more information drive internal error code. See corresponding drive manual
) So m	arked error descriptions are not released officially by R&D. If necessary, contact

a specialist or the Locarno hotline for more information.

Code	SEM3x Message
1601	SEM3x GENERAL ERROR *)

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	SIM/Chip Card Message
	CHIP CARD WRONG DEVICE
1901	The elevator main controller has a software internal problem accessing the SIM card
	C1:Internal elevator main controller software error

A1:Upgrade elevator main controller software (SCIC)

Code	SIM/Chip Card Message	
1902	CHIP CARD FILE NOT FOUND	
	The elevator main controller expects specific files on the SIM card. At least one expected file is missing.	
	C1:SIM card with wrong software version inserted	
	A1:Check SIM Card software version. Get right SIM card, insert it and perform a elevator main controller reset.	
	CHIP CARD NOT FORMATED	
	The SIM card inserted on the elevator main controller board is not formatted.	
1904	C1:The SIM card is not formatted	
	A1:Get right SIM card, insert it and perform a elevator main controller reset.	
	CHIP CARD NO OR NO SCHINDLER CARD	
	No or invalid SIM card inserted on the elevator main controller board.	
	C1:No SIM card inserted	
	A1:Get right SIM card, insert it and perform a elevator main controller reset.	
1905	C2:The SIM Card is inserted wrongly	
	A2:Remove SIM card, insert it correctly and perform a elevator main controller reset.	
	C3:No Schindler SIM Card inserted	
	A3:Get right SIM card, insert it and perform a elevator main controller reset.	
	CHIP CARD READING ERROR	
	There is a problem reading the SIM card. Note that this error typically relates to any other SIM card error.	
1906	C1:SIM card reading error	
	A1:Check error log for other SIM card errors. Please refer to corresponding causes and actions. If no other error is reported, replace SIM card.	
	CHIP CARD WRITING ERROR	
	There is a problem writing to the SIM card. Note that this error typically relates to any other SIM card error.	
1907	C1:SIM card writing error	
	A1:Check error log for other SIM card errors. Please refer to corresponding causes and actions. If no other error is reported, replace SIM card.	
	CHIP CARD WRONG FILE SYSTEM VERSION	
	Invalid Schindler SIM card inserted on the elevator main controller board.	
1908	C1:SIM card has a wrong file system version respectively a wrong data format. This means the SIM card does not contain the data (for example, FC parameters, OEM data structure) as expected by the elevator main controller (SCIC).	
	A1:Get right SIM card, insert it and perform an elevator main controller reset.	

Code	Trip Manager Message
	TRIP LEARNING LEVEL MISSING
	The number of floor levels counted during the learning trip in upward directio does not correspond to the one counted with the check in downward direction
2002	C1:Bad alignment of floor sensors with magnets (KS) or PHS flags in shaft
	A1:Check alignment of magnets (KS) or PHS flags.Check position of floo sensor. Check magnet to sensor distance.
	C2:Bad floor sensor signal transmission
	A2:Check general electrical wiring of the floor sensor signal (for example, connections at KS/PHS, at SDIC7x,)
	C3:Floor sensor(s) defect
	A3:Replace floor sensor(s)
	C4:Faulty input on the interface board (PCB) for the floor sensor
	A4:Replace interface board (SDIC7x)
	TRIP LEARNING NUMBER OF LEVELS VARY
2003	C1:The number of floor levels counted during the learning trip in up direction does not correspond to the one counted during the down direction checking phase.
	A1:Check magnets / PHS flags. Check KS / PHS sensors / cable
	TRIP LEARNING LEVEL OUTSIDE ARRAY LIMITS
	Indicates that the number of learned floors is invalid
	C1:The number of learned floors exceeded the max floors supported by the elevator system
2004	A1:Check the number of door zone indicators in the hoistway (for example, magnets, vanes)
	C2:The number of learned floors does not correspond with the commissioning data
	A2:Crosscheck the number of door zone indicators in the hoistway (for example, magnets, vanes) with the allowed number of floors according the commissioning data
	TRIP POSITION TARGET NOT REACHED
	The elevator has finished a trip but the car is signalized by the hoistway information system not to be in door zone.
2005	C1:Different causes
2003	A1:Check elevator message log for previous reported messages in ord to identify the root cause of the problem.
	C2:Signal of door zone detection faulty
	A2:Check door zone sensors (for example, PHSx) and wiring.
2006	

Code	Trip Manager Message		
	TRIP POSITION MOVE NOT IN DOOR ZONE		
	The elevator was intended to start a trip while the car was not detected to be on floor. Note that this error only occurs while not in manual trip operation (for example, inspection)		
2007	C1:Different causes		
	A1:Check elevator message log for previous reported messages		
	C2:Failure at door zone detection of hoistway information system		
	A2:Check door zone detection of hoistway information system (for example, PHSx, mechanical adjustment, defective sensor etc.)		
	TRIP SYNCHRO ROUGH POSITION STATE ERROR		
2008	C1:The synchronization or (under certain conditions) the service trip did receive a inconsistent KSE update		
	A1:Check KSE magnets.Check KSE magnet switch.Redo learning trip.		
2009	TRIP WARNING TRIP SYNCHRO ROUGH POSITION STATE ERROR *)		
	TRIP LEARNING DIRECTION UNKNOWN RECEIVED		
2010	C1:During the learning trip, the direction of travel becomes unknown. This can only happen if some serious error in the elevator system occurred. The trip is stopped.		
	A1:Start new learning trip		
2011	TRIP LEARNING WRONG MAGNET ORDER		
2011	C1:Releveling failure		
	TRIP RELEVELING FATAL ERROR		
2012	C1:Releveling failure caused by safety chain opening		
	A1:Check: Safety Chain Circuit, SUET		
	TRIP LEARNING MINIMAL TRAVEL DISTANCE		
2060	C1:The distance between two flags (floors) is less than the allowed minimal traveling distance (300mm)		
	A1:Check flag distance, PHS position		
	TRIP LEARNING INTOLERABLE FLAG LENGTH		
	Detected a too long or too short door zone. Note that this error is typically reported at the learning travel.		
	C1:Tacho factor or drive pulley diameter invalid		
2061	A1:Check corresponding parameter for right values		
	C2:Signal of door zone detection faulty		
	A2:Check door zone sensors (for example, PHS)		
	C3:Flag length out of range		
	INF LEARNING UPPER FLAG EDGE ALREADY SET		
2062	already set. This can only happen, if we do not allow overwriting of the shaft image (for example, while traveling upwards, where no value should have been set before).		
	A1:Redo learning trip		
	C2:EMC disturbance?		

Code	Trip Manager Message	
2063	TRIP LEARNING UPPER FLAG EDGE NOT SET	
	C1:The EC application missed to set the upper flag for a level. A1:Redo learning trip	
	TRIP LEARNING LOWER FLAG EDGE ALREADY SET	
2064	C1:The EC application tried to set the value for a lower flag that was already set. This can only happen, if we do not allow overwriting of the shaft image (for example, while traveling upwards, where no value should have been set before).	
	A1:Redo learning trip	
	C2:Possible problems with shaft info circuit? (PHS, light barrier, magnet switch)	
	C3:EMC disturbances?	
	TRIP LEARNING LOWER FLAG EDGE NOT SET	
	C1:The EC application missed to set the lower flag for a level.	
2065	A1:Redo learning trip	
	C2:Problems with shaft info circuit? (PHS, light barrier, magnet switch)	
	C3:EMC disturbance?	
	TRIP LEARNING INVALID DOOR ENTRANCE SIDE	
2066	C1:The EC application tried to set a door side that is not allowed (its not the same as 'already set', an invalid value is the problem.).	
2000	A1:Redo learning trip	
	C2:Problems with shaft info circuit? (PHS, light barrier, magnet switch)	
	C3:EMC disturbance?	
	TRIP LEARNING DOOR ENTRANCE SIDE NOT SET	
2067	C1:The EC application missed to set a door side for a level.	
	A1:Check flags, Check light barrier cable, Check encoder, Redo learning trip	
	TRIP LEARNING DOOR ENTRANCE SIDE ALREADY SET	
2068	C1:The EC application tried to set a door entrance side that has already been set.	
	A1:Check flags, Check light barrier cable, Check encoder, Redo learning trip	
	TRIP LEARNING INVALID LOWER FLAG EDGE	
2069	C1:The EC application tried to set the height of a lower flag edge bigger than the height of the upper flag.	
	A1:Check flags, Check light barrier cable, Check encoder, Redo learning trip	
	TRIP LEARNING INVALID UPPER FLAG EDGE	
2070	C1:The EC application tried to set the height of a lower flag edge smaller than the height of the upper lower flag.	
	A1:Check flags, Check light barrier cable, Check encode, Redo learning trip	

Code	Trip Manager Message	
2071	TRIP LEARNING UPPER FLAG EDGE DIFFER	
	C1:The EC application sets an new upper flag edge height. The difference between the last value and this one is bigger than accepted.	
	A1:Check rope slip, Check encoder, Redo learning trip (Warning: Do not change load while performing a learning trip)	
	TRIP LEARNING LOWER FLAG EDGE DIFFER	
2072	C1:The EC application sets an new lower flag edge height. The difference between the last value and this one is bigger than accepted.	
	A1:Check rope slip, Check encoder, Redo learning trip (Warning: Do not change load while performing a learning trip)	
	TRIP LEARNING DOOR ENTRANCE SIDE DIFFER	
2073	C1:The EC application tried to set a door entrance side. The side was already set, we allowed overwriting but the last value does not correspond with the new one.	
	A1:Check rope slip, Check encoder, Redo learning trip (Warning: Do not change load while performing a learning trip)	
	TRIP POSITION NESTED MOVE	
2074	C1:A client requests a move in position mode, but the drive did not have the time to acknowledge the last.	
	A1:Reset EC	
	TRIP POSITION CORRECTION TOO BIG	
	The first limit for the correction of the car position (typically 30 mm) during a trip has exceeded. Note that this warning is only applicable for closed loop drives. The current running trip does not get interrupted.	
	C1:Insufficient traction	
	A1:Check for excessive rope slip	
	C2:Mechanical problem with motor tacho	
	A2:Check tacho on hoisting machine	
2075	C3:Excessive rope elongation during trip	
	A3:Check ropes (type and number of ropes)	
	C4:Problem with floor sensor (flag/photocell)	
	A4:Check correct installation/operation of floor sensors in hoistway	
	C5:Delayed transmission from floor sensor interface board (SDIC7x) to the drive frequency converter (FC)	
	A5:Check communication on CAN bus (termination)	
	C6:Faulty input on the interface board (PCB) for the floor sensor	
	A6:Replace interface board (SDIC7x)	
	TRIP LEARNING AVERAGE FLAG LENGTH EXCEEDED	
2076	C1:The calculation of the average flag length after the adjustment of the FC parameter traction "PULLEY_DIAMETER" results in a value bigger than the tolerated limit.	
	A1:Check shaft information. Check flags length. Check FC parameter 11.26 "Traction Pulley Diameter-DD", Redo learning trip	

Code	Trip Manager Message	
2077	TRIP LEARNING FLAG EDGE SEQUENCE	
	C1:During the learning trip the same edge is received twice in line. For example, two times a rising edge with no falling edge in between.	
	A1:Check light barrier. Check SDIC7x board, Check CAN bus (cable, termination, plugs, EMC)	
	TRIP FINAL LEVEL NOT FOUND	
	The terminal floor indication (top or bottom floor) is faulty	
	C1:The distance between the signalization of the hoistway end and the corresponding terminal floor (top respectively bottom floor) is out of range	
2078	A1:Check position of terminal floor sensor (top or bottom floor, for example, PHS), Check position of hoistway end sensor (for example, KSEx)	
	C2:The signal indicating the hoistway end is faulty	
	A2:Check hoistway end sensors (for example, KSEx).Check general wiring to this sensor.	
	C3:The signal indicating the terminal floor is faulty	
	A3:Check (terminal) floor sensor (for example, PHS).Check general wiring to this sensor.	
	TRIP PHSx SIGNAL PERSISTENTLY BRIDGED	
	During a trip the shaft information signal PHS and/or PHS1 do not change their state as expected. They are permanently active (for example, bridged for test).	
	C1:PHS/PHS1 bridge for test still mounted	
	A1:Remove bridge. Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.	
2079	C2:Connection to PHS or PHS1 bad	
	A2:Check wiring to PHS/PHS1.Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.	
	C3:PHS or PHS1 sensor defect	
	A3:Replace corresponding sensor. Perform a manual reset respectively perform the persistent fatal error reset procedure to set the elevator back in operation.	
	TRIP PHNR SIGNAL INCONSISTENT	
	After each landing of the car on a floor a consistency check of the shaft information signals for releveling PHNR_U and PHNR_D gets performed. This error occurs if both of the signals are inactive at this point of time.	
2080	C1:Sensor position of PHNR_U/PHNR_D wrong	
	A1:Check these sensors for misalignment	
	C2:The shaft information signals PHNR_U/PHNR_D are faulty	
	A2:Check sensors PHNR_U/PHNR_D for dirt or defect. Check general wiring PHNR_U/PHNR_D.	
2082	TRIP HOURS IN SERVICE MISMATCH	
2083	TRIP HOURS IN SERVICE ENTERED MANUALLY	
2084	TRIP COUNTER MISMATCH	
2085	TRIP COUNTER ENTERED MANUALLY	

Code	Trip Manager Message

### 2086 FC NON DETERMINABLE PERS AT STARTUP

A blind floor PHSB is at the end of shaft

#### TRIP LEARNING BLIND FLOOR UNEXPECTED

**2087** A blind floor flag (PHSB) has been detected on a system where no blind floors are expected

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	Hoistway Message	
2101	SHAFT UNDEFINED	
	C1:Shaft is undefined yet.	
	A1:Do: Manually reset the system on microprocessor board	
	SHAFT LEVEL MISSING	
2102	C1:The shaft information contains missing levels.	
	A1:check shaft info	
	SHAFT NUMBER OF LEVELS VARY	
2103	C1:The total number of levels stored in the EEPROM differs from the actually measured.	
	A1:Redo: learning trip	
	SHAFT LEVEL OUTSIDE ARRAY LIMITS	
2104	C1:Too many floors. While setting up the RAM shaft image at the application startup a level is addressed outside the array limits. [Level <0 or level > 15]	
	A1:Check: number of magnets/ flags. Redo: learning trip	
	SHAFT IMAGE IN ERROR STATE	
2110	C1:The shaft image object is in error state due to an error at the application startup.	
	A1:The system error handling automatically does a synchronization trip.	
	SHAFT INVALID ROUGH POSITION	
2111	C1:This error can result from an invalid respectively incomplete signaling of KSE indicator changes.	
	A1:See 2110.	
	SHAFT INVALID SHAFT STAGE	
2112	C1:This error can result from an invalid respectively incomplete signaling of PHS respectively KS indicator changes.	
	A1:See 2110.	
	SHAFT INVALID CURRENT LEVEL	
2113	C1:This error can result from an invalid respectively incomplete signaling of PHS respectively KS indicator changes.	
	A1:See 2110.	

Code	Hoistway Message	
2114	SHAFT POSITION LOST WHILE STATIONARY	
	The hoistway information system has indicated the car out of the door zone (car not on floor) while the car is expected standing on floor	
	C1:Failure at door zone detection of hoistway information system	
	A1:Check door zone detection of hoistway information system (for example, PHSx, mechanical adjustment, defective sensor etc.)	
	C2:Car has left door zone	
	A2:Check suspension means (for example, ropes for too high elongation). Check drive brake	
	SHAFT POSITION LOST WHILE BOUNCING	
2115	C1:A KSE or level indicator change is signaled while the car is stabilizing. This stabilizing period is actually defined with 2 seconds.	
	A1:See 2110.	
	SHAFT INCONSTANT LEVEL INDICATORS	
2116	C1:This error can result from an invalid respectively incomplete signaling of PHS respectively KS indicator changes.	
	A1:See 2110.	
2118	SHAFT INVALID TRAVEL MODE	
	A1:The system error handling automatically does a synchronization trip.	
2119	SHAFT INCONSTANT KSE INDICATORS	
	A1:The system error handling automatically does a synchronization trip.	
	SHAFT ACCESS PERSISTENT MEDIUM	
2125	C1:Could not write to EEPROM.	
	A1:Do: Replace SCIC board (bigger EEPROM needed). Or reduce number of levels.	
	SHAFT WRONG MAGNET TRANSITION	
2126	C1:sequence of N->N or S->S	
	A1:Check: KS position Do: learning trip	
2127	SHAFT NO KS1 DETECTION POSSIBLE	
	A1:Check: KS/ KS1 presence	
	SHAFT WRONG MAGNET TRANSITION INFORMATION	
2128	C1:same as 2126 but classified as recoverable instead of fatal	
	A1:same as 2126	
2129	SHAFT ROUGH POSITION MISMATCH	
	A1:Check: Shaft information, flags length. Do: Learning trip	
	SHAFT WRONG INITIALIZATION	
2130	C1:Shaft image: wrong initialization	
	A1:Do: Learning trip	
2131	SHAFT LUET KS KS1 INCONSISTENT	
	A1:Check: KS/ KS1 presence and position. Do: Learning trip	

#### Hoistway Message

#### SHAFT INCONSISTENT KSE D U STATE

Code

The signal indicating the hoistway end is invalid (for example, inconsistent). Failure at hoistway information.

C1:A hoistway end position indicator (for example, KSE, KSE\_U, KSE\_D) is missing or not at the correct position.

2132 A1:Check correct position of the corresponding indicator (for example, magnet and its polarity, vane)

C2:A hoistway end position sensor is faulty.

A2:Check functionality of corresponding sensor. Replace it if necessary.

C3:Wiring to hoistway end position sensor is faulty.

A3:Check wiring at the corresponding sensor.

#### SHAFT MIX KSE AND KSE D U

The elevator control received signals from the hoistway information system which aren't signals of the expected hoistway information system type.
 2133

C1:Wiring to hoistway end position sensor is faulty.

A1:Check wiring and correct connection of the corresponding sensor (KSE, KSE\_U, KSE\_D).

2134 SHAFT KSE AND TSD OPTION

#### SHAFT TSD SIGNAL CHANGE

The elevator has detected an unexpected change of the signal TSD (state of the presence of the temporary safety device).

C1:The wiring at the signal TSD is faulty

#### 2135 A1:Check general wiring

C2:The elevator main controller board was exchanged by a board from another elevator

A2:Perform the learning travel. At no success replace elevator main controller board (for example, SCIC, SCPU) by a new one from the factory.

#### SHAFT ROUGH POS MISSMATCH TOP

Failure at the upper hoistway end detection

- C1:Wiring to the upper hoistway end position sensor is faulty.
- A1:Check wiring at the corresponding sensor.

C2:The upper hoistway end position sensor is faulty.

A2:Check functionality of corresponding sensor. Replace it if necessary.

Code	Hoistway Message
	SHAFT SPEED SUPERVISION AT ROUGH POS CHANGE
	The car was not decelerating (still traveling in normal speed) while it was reaching the shaft end (at KSE) because the wrong number of floors was counted. Failure in shaft information system.
	C1:Bad alignment of floor sensors (KS/KS1) with magnets in shaft
	A1:Check alignment of magnets. Check position of floor sensors. Check for lost magnets. Check magnet to sensors distance.
	C2:Bad floor sensor signal transmission
2137	A2:Check general electrical wiring of the floor sensor signal (for example, connections at KS/KS1, at SDIC7x,)
	C3:Floor sensor (KS/KS1) defect
	A3:Replace corresponding floor sensor
	C4:Faulty input on the interface board (PCB) for the floor sensor
	A4:Replace interface board (SDIC7x)
	C5:One or more floor indication magnet of the shaft information system is/are mounted with wrong magnetic orientation
	A5:Check entire shaft for the correct magnetic orientation (N,S) of these magnets
	SHAFT CAR RELEVELING ZONE SIGNAL INVALID
	The signal indicating the car releveling zone is invalid (for example, inconsistent). Failure at hoistway information.
	C1:A car releveling zone indicator is missing or not at the correct position
	A1:Check correct position of the corresponding indicators (for example, alignment of magnets, vanes)
	C2:A car releveling zone sensor is defective
2138	A2:Check functionality of corresponding sensor (for example, PHS, PHNR_U, PHNR_D). Replace it if necessary.
	C3:A car releveling zone sensor signal is faulty
	A3:Check general wiring of corresponding sensors (for example, PHNR_U, PHNR_D). Check at optical sensors (for example, PHS, PHNR_U. PHNR_D) vanes and sensors for dirt and proper shielding from sunlight (for example, at glass shaft).
	C4:Bad data transmission
	A4:Some hoistway information system transfer their data via data bus. Check data bus (e.g CAN) for correct data transmission (for example, bad shielding of data wire).
2420	SHAFT ROUGH POS MISSMATCH BOTTOM
2139	Failure at the lower hoistway end detection
	SHAFT MINIMAL TRAVEL DISTANCE
2160	C1:While validating the RAM shaft image at the application startup, a too small travel distance (< 300 mm) between the levels is detected.
	A1:Redo: Learning trip
	SHAFT INTOLERABLE FLAG LENGTH
2161	C1:At application startup (reset): While setting up the levels in the RAM shaft image an intolerable flag length is detected.
	A1:Check: for rope slippage. Check: encoder. Redo: learning trip. Warning: do not change the load during learning

#### Hoistway Message

#### SHAFT UPPER FLAG EDGE ALREADY SET

C1:While setting up the RAM shaft image at the application startup the upper flag edge position of a level is about to be set multiple times.

2162 A1:Check: rope slip. Check: encoder. Check: flag position. Redo: learning trip

C2:Problems with shaft info circuit (PHS, light barrier, magnet switch)

C3:EMC disturbances

Code

2164

SHAFT UPPER FLAG EDGE NOT SET

C1:While setting the RAM shaft image at the application startup, a missing upper flag edge position is detected.

A1:Manually erase the shaft image file on the persistent data medium and run the synchronization trip.

SHAFT LOWER FLAG EDGE ALREADY SET

C1:While setting up the RAM shaft image at the application startup the lower flag edge position of a level is about to be set multiple times.for example, caused by arriving at the flag edge toggling many times.

A1:Redo: learning trip

**C2:EMC disturbances** 

C3:Problems with shaft info circuit.(PHS, light barrier, magnet switch)

SHAFT LOWER FLAG EDGE NOT SET

C1:While setting the RAM shaft image at the application startup a missing lower flag edge position is detected.

<sup>2165</sup> A1:Redo: learning trip

C2:Problems with shaft info circuit (PHS, light barrier, magnet switch)

C3:EMC disturbances

SHAFT INVALID DOOR ENTRANCE SIDE

C1:While setting up the RAM shaft image at the application startup an invalid door entrance side is detected.

<sup>2166</sup> A1:Redo: learning trip

C2:See 2165

C3:See 2165

SHAFT INVALID DOOR ENTRANCE SIDE

C1:While setting up the RAM shaft image at the application startup an invalid door entrance side is detected.

<sup>2166</sup> A1:Redo: learning trip

C2:See 2165

C3:See 2165

SHAFT DOOR ENTRANCE SIDE NOT SET

C1:While setting up the RAM shaft image at the application startup a missing door entrance side is detected.

2167 A1:Redo: learning trip

C2:Problems with shaft info circuit (PHS, PHUET, light barrier, magnet switch)

C3:EMC disturbances

Code	Hoistway Message
2168	SHAFT DOOR ENTRANCE SIDE ALREADY SET
	C1:While setting up the RAM shaft image at the application startup the door entrance side of a level is about to be set multiple times.
	A1:Redo: learning trip
	C2:Problems with shaft info circuit (PHS, PHUET, light barrier, magnet switch)
	C3:EMC disturbances
	SHAFT INVALID LOWER FLAG EDGE
	C1:While setting up the RAM shaft image at the application startup an invalid lower flag edge position is detected.
2169	A1:Redo: learning trip
	C2:See 2165
	C3:See 2165
	SHAFT INVALID UPPER FLAG EDGE
2470	C1:While setting up the RAM shaft image at the application startup an invalid upper flag edge position is detected.
2170	A1:Redo: learning trip
	C2:See 2165
	C3:See 2165
Code	FA Message
2200 to	FA drive errors (2 speed systems) Not used with Schindler 3100/3300/6300
2205	If one of these error occurs please contact hotline Locarno or a specialists.
Codo	Eroquonov Convertor Alarming Mossage
2309	
	FC ALARM UNDERVOLIAGE
2315	
	C1:FC (Closed Loop) Motor stalled
	A1:Check motor. Check electromechanical brake MGB
	C2:The motor stall protection has tripped for example, electromechanical brake (MGB) has not opened. Note: You can program if this condition generates A15 or F15 or nothing.

Code	Frequency Converter Alarming Message
	FC ALARM MOTOR OVERTEMPERATURE
	The car drive hoisting machine has exceeded its operating temperature
	C1:The heat dissipation is not working
	A1:Check operation of heat dissipation device (for example, fan or forced ventilation) if present
2316	C2:Too hot ambient air temperature (for example, direct sunlight at glass shaft)
	A2:Wait for cool down
	C3:The temperature feedback signal is faulty
	A3:Check general wiring to temperature sensor.Check operation of temperature sensor.
	C4:Too intensive operation (for example, too many trips per time unit)
	A4:Wait for cool down
	FC ALARM MOTOR UNDERLOAD
2317	C1:FC (Closed Loop) Motor underload
	A1:Check gear box
	FC ALARM HISTORY MAYBE LOST
2324	C1:The values in the Fault history, MWh-counters or operating day/hour
	A1:Does not need any actions. Take a critical attitude to these values
	FC ALARM APPLICATION CHANGE FAILED
2328	C1:Application change failed
	A1:Choose the application again and press the enter button
	FC ALARM UNBALANCED CURRENTS
2330	C1:Unbalanced current fault, the load on the segments in not equal.
	A1:Replace frequency converter
	FC ALARM TOO HIGH OR TOO LOW SPEED AT TARGET PHS
2342	C1:FC (Closed Loop) Wrong speed at target (last PHSx rising edge)
	A1:Check flags position Check PHS1/2 sensors. Redo learning trip
	FC ALARM CONVERTER OVERTEMPERATURE
2345	C1:Temperature of heatsink over programmable temp. value (for example, +40?C)
	A1:Check the cooling air flow and the ambient temperature
	FC ALARM STATE MACHINES SUPERVISION
2349	C1:FC (Closed Loop) Internal logical error
	A1:Check FC states. If error occurs repeatedly replace FC
	FC ALARM BRAKING RESISTOR OVERTEMPERATURE
2354	C1:Brake resistor bimetal temperature switch. The brake resistor temp monitoring circuit has opened. If elevator is executing a trip it can usually be finished. New trip cannot be started before bimetal temp switch is closed again (5 min.)
	A1:Check brake resistors temperature. Check wiring and/or the bimetal temperature switch itself

Code	Frequency Converter Alarming Message
	FC ALARM OUTPUT CONTACTORS SUPERVISOR
2357	C1:FC (Closed Loop) Output contactors failure in standstill
	A1:Check output contactors feedback inputs SH1_STATE and SH1_STATE (DIA1, DIA2) and/or corresponding n.c. SH/SH1 auxiliary contacts. Check also ("external") test jumper XTHS and XTHS1 Position and Wiring (drive module)
	FC ALARM PWM ENABLE INPUT WRONG STATE
2358	C1:FC (closed Loop) Wrong PWM input state
2000	A1:Check PWM_ENABLE input (DIB4) and/or corresponding auxiliary n.o. SH1 contact.
	FC ALARM MECHANICAL BRAKE KBKB1
2364	C1:FC (Close Loop) Mechanical brake KBKB1 contactor problem
	A1:check brake and its contacts
	FC ALARM MECHANICAL BRAKE KB
2370	C1:FC (Close Loop) Mechanical brake KB contactor problem
	A1:check brake and its contacts
	FC ALARM MECHANICAL BRAKE KB1
2371	C1:FC (Close Loop) Mechanical brake KB1 contactor problem
	A1:check brake and its contacts
2401	FC PROXI UNUSED WARNING
	FC HEARTBEAT TIMEOUT
	The communication to the drive node (controller) has broken
	C1:Drive node disconnected (for example, CAN bus)
	A1:Reconnect node
	C2:No or bad drive node power supply
2402	A2:Check node power supply
	C3:Data transmission faulty (for example, CAN bus)
	A3:Check general data line connection. Check for correct data line termination (jumpers and switches, if present) of all devices (PCBs) connected to the data bus. Check shielding of data line (if present).Check for EMC disturbances.
	C4:Drive node defective
	A4:Replace corresponding node
	FC TRUE START TIMEOUT
2403	The elevator main controller does not receive the expected acceleration confirmation data telegram from the drive within the expected time (for example, 2.5s) after a start command.
	C1:Different causes
	A1:Check elevator message log for previous reported messages in order to identify the root cause of the problem.
	C2:See 2402, C3
	A2:See 2402, A3
	C3:The elevator main controller and the drive are out of sync.
	A3:Perform a reset of the entire system

#### FC MOVE CMD TIMEOUT ERROR

The elevator main controller does not receive the expected data from the drive node within the expected time after a request.

### C1:Different causes

Code

A1:Check elevator message log for previous reported messages in order to identify the root cause of the problem.

C2:The elevator main controller and the drive are out of sync.

A2:Perform a reset of the entire system

#### FC DRIVE PHASE

C1:Drive (FC) reports phase inconsistent

### A1:Check CAN cable. Check CAN cable termination

C2:The FC phase (state) is not consistent with the previous one. (for example, if after standstill, decelerating is sent).There has either missing a message or the FC software has a bug.Has nothing to with electrical motor phase connections.

FC PROXY WARNING DISTANCE ZERO MOVE RQST

2406 C1:The FC has received a zero distance move request.This is an EC application (internal) error.

FC PROXY WARNING DIRECTION NONE MOVE RQST

2407 C1:The FC has received a no direction move request.This is an EC application (internal) error.

FC PROXY WARNING DIRECTION INVERSION MOVE RQST

2408 C1:EC application (internal) error.If within a trip from one move request to another the direction changes.

#### FC PROXY WARNING ZERO LEVELS MOVE\_RQST

2409 C1:The FC has received a zero level move request.This is an EC application (internal) error.

#### FC PROXY WARNING NESTED MOVE RQST

2410 C1:EC application (internal) error. If a move command tries to override another one.

FC PROXY WARNING MOVE RQST WHILE STOPPING

2411 C1:EC application (internal) error. EC does not stick to the given timeouts.

#### FC PROXY WARNING MOVE RQST WHILE UNAVAILABLE

2412 C1:EC application (internal) error. EC does not stick to the given timeouts.

#### FC PROXY WARNING MOVE RQST WITH WRONG FC MODE

- 2413 C1:EC application (internal) error. After startup the enable delay is too long.
- 2414 FC PROXY WARNING RQST TO RECOVER AFTER FATAL
- C1:EC application (internal) error. EC tried to recover from a fatal error.
- 2415 FC PROXY WARNING SAFETY CHAIN WILL BE DISABLED
- C1:Due to FC error the safety chain will be disabled (via RH1 relay).

Code	Frequency Converter Alarming Message
2416	FC PROXY WARNING GENERIC LOGICAL ERROR
	C1:EC application (Internal) error. Collects the rest of unmentioned errors.
2417	FC PROXY WARNING HIGH LOAD UNBALANCE
	C1:EC application (Internal) error.
	FC PROXY WARNING DRIVE BECAME UNAVAILABLE
2418	C1:Drive (FC) became unavailable (for example, command. lost or other error happened)
	A1:Check FC parameters. Restart system and reset FC errors. Change FC
	FC PROXY WARNING DRIVE PHASE BECAME UNKNOWN
2419	C1:Drive (FC) state transition inconsistency or communication lost cause the "Drive-phase" to be unknown.
	A1:Check CAN bus.
	FC PROXY WARNING UNKNOWN FC ERROR RECEIVED
2420	C1:Unknown FC error received
	A1:Version compatibility?
	FC PROXY WARNING UNKNOWN FC ALARM RECEIVED
2421	C1:Unknown FC alarm received.
	A1:Version compatibility?
2422	FC PROXY WARNING RECOVER FROM ERROR LOGIC
	C1:EC application (Internal) error.
	FC CMD STOP TIMEOUT
	C1:Drive (FC) does not confirm the stopping request.
2423	A1:Check CAN cable. Check CAN cable termination
	C2:The EC sends a move command to the FC and the FC does not
	A2:Check if EC is running
2424	CALEC request a move while drive was not in standby
2424	A1:Reset EC Report repeated occurrences
2425	C1:EC requested a dynamic move while drive was decelerating
2120	A1:Reset EC. Report repeated occurrences.
	FC PROXY WARNING DYNAMIC MOVE RQST WHILE IN STAND BY
2426	C1:EC requested a dynamic move while drive was in standby (=not dynamic).
	A1:Reset EC. Report repeated occurrences.
2427	FC PROXY WARNING FC SW VERSION UNKNOWN YET
2428	FC PROXY WARNING FC HARDWARE VERSION UNKNOWN YET
2429	FC PROXY PARAMETER DOWNLOAD FAILED
	C1:Drive (FC) reports a parameter download failure
	A1:Check FC parameter values

Code	Frequency Converter Alarming Message
	FC PROXY PARAMETER COMPARE FAILED
2430	C1:Drive (FC) reports parameter value inconsistent
	A1:Check FC parameter values
2431	FC PROXY PARAMETER FC DATA NOT PRESENT
2401	C1:fc data not present
2422	FC PROXY PARAMETER SET NOT COMPLIANT
2432	C1:fc data not compliant
2422	FC PROXY PARAMETER WRONG FC SW VERSION
2433	C1:wrong FC SW-Version
2434	FC PROXY LAST
Codo	
Code	
2604	
2001	C1:Insufficient space
2602	
2002	A1:Do: persistent fatal error clearing procedure
2603	
2000	A1:Do: persistent fatal error clearing procedure
	EEPROM ACCESS TO UNKNOWN FILE *)
2604	C1:Faulty EEPROM
	A1:Replace elevator control PCB if failure persists
	EEPROM RV_NR FILE ERROR *)
2606	C1/A1: See 2604
2607	EEPROM ERROR LOG FILE ERROR *)
2007	C1/A1: See 2604
2608	EEPROM STATISTICS FILE ERROR *)
_,,,,	C1/A1: See 2604
2609	EEPROM DRIVE FILE ERROR *)
	C1/A1: See 2604
2610	EEPROM MODERNIZATION FILE ERROR *) C1/A1: See 2604
	EEPROM BASE NORMAL FILE ERROR *)
2611	C1/A1: See 2604
2612	EEPROM PASSWORD FILE ERROR *)
2012	C1/A1: See 2604
2612	C1/A1: See 2604 EEPROM TRAFFIC CTRL FILE ERROR *)

Code	EEPROM Message
2614	EEPROM LOP FILE ERROR *)
	C1/A1: See 2604
2615	EEPROM COP FILE ERROR *)
2013	C1/A1: See 2604
2616	EEPROM BASE SECURE FILE ERROR *)
	C1/A1: See 2604
2617	EEPROM EXT NORMAL FILE ERROR *)
2017	C1/A1: See 2604
2618	EEPROM EXT SECURE FILE ERROR *)
	C1/A1: See 2604
2619	EEPROM DOOR FILE ERROR *)
2010	C1/A1: See 2604
	EEPROM EMBEDDED RM FILE ERROR
2620	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at remote monitoring file)
	EEPROM DATETIME FILE ERROR
2621	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
	C1:Faulty EEPROM
	A1:Replace elevator control PCB if failure persists
	EEPROM DIAGNOSTIC FILE ERROR
2622	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
	EEPROM FIRE FILE ERROR
2623	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
	EEPROM DRIVE COMMON FILE ERROR
2624	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
	EEPROM STM FILE ERROR
2625	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
	EEPROM MONITORING FILE ERROR
2626	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time files)
	EEPROM SW VERSION HISTORY FILE ERROR
2627	Corrupted data in the persistent memory (EEPROM) of the elevator control (CRC error at date and time file)
2698	EEPROM FORMATTED
	The EEPROM with configuration/custom data is detected as virgin and has been formatted

\*) Error descriptions are not officially released by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	Hydraulic Message
2701	Hydraulic errors. Not used with Schindler 3100/3300/6300
to 2710	If one of these errors occurs: Please contact a specialist or hotline Locarno.
Code	AAT Message
3101 to 3173	<b>AAT Automatic Acceptance Tests Errors</b> For further description and solutions refer to documentation Automatic Acceptance Tests Guidelines (J 139452 or J 41140148)
3101 to 3109	SGC "Safety gear car" related errors (see J 139452 or J 41140148)
3110 to 3114	AOS "Ascending car overspeed protection" related errors (see J 139452 or J 41140148)
3115 to 3119	HBU "Half brake capability upward" related errors (see J 139452 or J 41140148)
3120 to 3124	HBD "Half brake capability downward" related errors (see J 139452 or J 41140148)
3125 to 3128	<b>RTL "Run time limit"</b> related errors (see J 139452 or J 41140148)
3129 to 3133	FBU "Full brake capability upward" related errors (see J 139452 or J 41140148)
3134 to 3138	FBD "Full brake capability downward" related errors (see J 139452 or J 41140148)
3139 to 3144	<b>CWB "counterweight balancing"</b> related errors (see J 139452 or J 41140148)
3145 to 3146	SMDO "Door opening speed" related errors (see J 139452 or J 41140148)
3147 to 3153	SGCE "Safety gear with empty car" related errors (see J 139452 or J 41140148)
3154 to 3157	KNU "KNE top" related errors (see J 139452 or J 41140148)
3158 to 3161	KND "KNE bottom" related errors (see J 139452 or J 41140148)
3162 to 3165	<b>CIB "Car impact on buffer"</b> related errors (see J 139452 or J 41140148)
3166 to 3169	<b>CWIB "counterweight impact on buffer"</b> related errors (see J 139452 or J 41140148)
31 70	Half brake down insufficient shaft height

Co	de	AAT Message
31	71	Half brake up insufficient shaft height
31	72	Safety gear car test unexpected stop
31	73	Safety gear with empty car test unexpected stop
31	74	AAT STM MONITORING CAR NOT AT CONTROL CABINET FLOOR

- 31 75 AAT STM MONITORING CANCELED
- 31 76 AAT STM MONITORING ABORTED

Code	CANIO Message
3201	CANIO PCB errors. Not used with Schindler 3100/3300/6300
to	If one of these errors occurs: Please contact a specialist or hotline Locarno.

3216

Code

#### **TSD Message**

#### N-KNET IN NON TSD

The elevator has detected a change of the signal KNET (state of triangle key at landing door) which is only used together with TSD (temporary safety device)3301 but the TSD is not detected as present.

#### C1:The wiring at the signal KNET is faulty

#### A1:Check general wiring

#### JREC IN TSD

The elevator has detected a change of the signal JREC (state of inspection switch on top-of-car inspection panel) which is only used together with standard top-of-car inspection but the standard top-of-car inspection is not detected as present. TSD (temporary safety device) is detected as present instead.

3302 C1:The wiring at the signal JREC is faulty

#### A1:Check general wiring

C2:The elevator main controller board was exchanged by a board from another elevator

A2:Perform the learning travel. At no success replace elevator main controller board (for example, SCIC, SCPU) by a new one from the factory.

#### **ELEVATOR KSR-A IN NON TSD**

The elevator has detected a change of the signal KSR\_A (state of TSD lever) which is only used together with TSD (temporary safety device) but the TSD is not detected as present.

#### C1:The wiring at the signal KSR\_A is faulty

3303 A1:Check general wiring

### C2:The elevator main controller board was exchanged by a board from another elevator

A2:Perform the learning travel. At no success replace elevator main controller board (for example, SCIC, SCPU) by a new one from the factory.

#### TSD FORBIDDEN CAR ROOF ACTION

Code

A forbidden car roof action for the TSD (Temporary Safety Device) was detected. This causes a potentially dangerous situation for the service technician.

C1:A button on the inspection panel (Stop, Up, Down) was pressed or the TSD lever was activated by the service technician on the car top while the car wasn't in inspection mode.

A1:Leave the car roof. Perform a elevator main controller reset and activate the TSD correctly.

# 3304 C2:Bad connection between the inspection panel and the IO interface board on the car (SDIC7x)

A2:Check connector and wiring of the inspection panel on the car top

C3:KNET input signal not working

A3:Check operation of KNET input signal on elevator main controller board

#### C4:Faulty KNET switch on a landing door

A4:Check operation of KNET switches

### 3305 TSD21 UNSAFE SHAFT ACCESS

The TSD21 device enters unsafe mode

#### TSD FORBIDDEN PIT ACTION

A forbidden pit action for the TSD (Temporary Safety Device) was detected. This causes a potentially dangerous situation for the service technician.

### C1:Incorrect pit access procedure

#### A1:Strictly follow the correct pit access procedure.

#### C2:TSD21 not enabled

A2:Check that the controller enables TSD21 when the KNET contact is activated.

#### **ELEVATOR N KNET NOT ENGAGED**

The elevator control has detected an activation of TSD21 without the corresponding KNET activation.

#### 3307 C1:Incorrect wiring of KNET contact

A1:Check the wiring of the KNET contacts.

#### C2:TSD21 input activation by error

A2:Check that the wires to the TSD21 inputs are firmly connected.

Code	HMI Message
3401	HMI VALUE OUT OF LOWER BOUND *)
3402	HMI VALUE OUT OF UPPER BOUND *)

\*) Error description is not officially released by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	EEPROM Message
	SAFETY CHAIN PIT CONTACT OVERBRIDGING ACTIVATION
	The overbridging of the safety circuit contacts in the pit (for example, used in fire operation Korea) wasn't successful.
	C1:Overbridging relays defect
3501	A1:Check function of relays RUESG, RUESG1 and RSG_A
3301	C2:Wiring from/to overbridging relays bad
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A
	C3:Fieldbus communication problem (please check previous errors in error log)
	A3:Check error 3603 for cause and actions
	SAFETY CHAIN PIT CONTACT OVERBRIDGING LOST
	The overbridging of the safety circuit contacts in the pit (for example, used in fire operation Korea) was lost.
	C1:Overbridging relays defect
3502	A1:Check function of relays RUESG, RUESG1 and RSG_A
	C2:Wiring from/to overbridging relays bad
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A
	C3:Fieldbus communication problem (please check previous errors in error log)
	A3:Check error 3603 for cause and actions
	SAFETY CHAIN PIT CONTACT OVERBRIDGING DEACTIVATION
	The cancellation of the overbridging of the safety circuit contacts in the pit (for example, used in fire operation Korea) wasn't successful.
	C1:Overbridging relays defect
3503	A1:Check function of relays RUESG, RUESG1 and RSG_A
	C2:Wiring from/to overbridging relays bad
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A
	C3:Fieldbus communication problem (please check previous errors in error log)
	A3:Check error 3603 for cause and actions
	SAFETY CHAIN PIT CONTACT UNEXPECTED OVERBRIDGING
	An unexpected overbridging of the safety circuit contacts in the pit has occurred.
3504	C1:Overbridging relays defect
	A1:Check function of relays RUESG, RUESG1 and RSG_A
	C2:Wiring from/to overbridging relays bad
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A
	C3:Fieldbus communication problem (please check previous errors in error log)
	A3:Check error 3603 for cause and actions

#### EEPROM Message

#### SAFETY CHAIN KNA CONTACT OVERBRIDGING ACTIVATION

The overbridging of the safety circuit contact at the car emergency exit (for example, used in fire operation Korea) wasn't successful.

#### 3505 C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

#### A1:Replace SIAP board

Code

3507

#### SAFETY CHAIN KNA CONTACT OVERBRIDGING LOST

The overbridging of the safety circuit contact at the car emergency exit (for example, used in fire operation Korea) was lost.

#### 3506 C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

A1:Replace SIAP board

#### SAFETY CHAIN KNA CONTACT OVERBRIDGING DEACTIVATION

The cancellation of the overbridging of the safety circuit contact at the car emergency exit (for example, used in fire operation Korea) wasn't successful.

## C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

A1:Replace SIAP board

#### SAFETY CHAIN KNA CONTACT UNEXPECTED OVERBRIDGING

An unexpected overbridging of the safety circuit contact at the car emergency exit has occurred.

#### 3508 C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

#### A1:Replace SIAP board

## SAFETY CHAIN SIM DOORZONE CONTACT OVERBRIDGING ACTIVATION UNSUCCESSFUL

The overbridging of the door safety circuit contacts, allowing to travel the car with opened doors (for example, used in fire operation Korea) wasn't successful.

#### C1:Wiring of door zone simulation bad

#### 3509 A1:Check connections between SUET board and SIAP board

## C2:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

#### A2:Replace SIAP board

C3:Door safety circuit overbridging failed

A3:Check errors 0338 for cause and actions

#### SAFETY CHAIN SIM DOORZONE CONTACT OVERBRIDGING LOST

The overbridging of the door safety circuit contacts, allowing to travel the car with opened doors (for example, used in fire operation Korea) was lost.

#### C1:Wiring of door zone simulation bad

A1:Check connections between SUET board and SIAP board

C2:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)

#### A2:Replace SIAP board

C3:Door safety circuit overbridging lost

#### A3:Check errors 0339 for cause and actions

Code	EEPROM Message	
3511	SAFETY CHAIN SIM DOORZONE CONTACT OVERBRIDGING DEACTIVATION UNSUCCESSFUL	
	The cancellation of the overbridging of the door safety circuit contacts, allowing to travel the car with opened doors (for example, used in fire operation Korea) wasn't successful.	
	C1:Cancellation of door safety circuit overbridging failed	
	A1:Check errors 0340 for cause and actions	
3512	SAFETY CHAIN SIM DOORZONE CONTACT UNEXPECTED OVERBRIDGING *)	
	SAFETY CHAIN ERROR NOT RECOVERABLE	
3513	The elevator wasn't able to recover from a opened safety circuit error (typ. after 20 repetitive door closing attempts). The elevator is blocked.	
	C1:Safety chain is open permanently	
	A1:Check where safety chain is open and why it does not close	
	SAFETY CHAIN PIT ACTIVATION CHECK UNSUCCESSFUL	
	The periodic check if the overbridging of the safety circuit contacts in the pit is running (for example, used in fire operation Korea) has failed.	
	C1:Overbridging relays defect	
351/	A1:Check function of relays RUESG, RUESG1 and RSG_A	
5514	C2:Wiring from/to overbridging relays bad	
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A	
	C3:Fieldbus communication problem (please check previous errors in error log)	
	A3:Check error 3603 for cause and actions	
	SAFETY CHAIN PIT DEACTIVATION CHECK UNSUCCESSFUL	
	The periodic check if the cancellation of the overbridging of the safety circuit contacts in the pit is running (for example, used in fire operation Korea) has failed.	
	C1:Overbridging relays defect	
3515	A1:Check function of relays RUESG, RUESG1 and RSG_A	
	C2:Wiring from/to overbridging relays bad	
	A2:Check wiring of relays RUESG, RUESG1 and RSG_A	
	C3:Fieldbus communication problem (please check previous errors in error log)	
	A3:Check error 3603 for cause and actions	
	SAFETY CHAIN KNA ACTIVATION CHECK UNSUCCESSFUL	
3516	The periodic check if the overbridging of the safety circuit contact at the car emergency exit is running (for example, used in fire operation Korea) has failed.	
	C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)	
	A1:Replace SIAP board	

Code	EEPROM Message
3517	SAFETY CHAIN KNA DEACTIVATION CHECK UNSUCCESSFUL
	The periodic check if the cancellation of the overbridging of the safety circuit contact at the car emergency exit is running (for example, used in fire operation Korea) has failed.
	C1:SIAP PCB defect (for example, relays simulating door zone (PHS/PHS1) defect)
	A1:Replace SIAP board
	SAFETY CIRCUIT NOT CLOSED AT ISK
	Safety circuit not closed at tap 'ISK' when expected to be closed (for example, before starting a trip)
	C1:At least one car door hasn't closed (for example, KTC open)
3550	A1:Check why the corresponding door hasn't closed
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A2:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section
	SAFETY CIRCUIT NOT CLOSED AT ISPT
3551	Safety circuit not closed at tap 'ISPT' when expected to be closed (for example, before starting a trip)
	SAFETY CIRCUIT NOT CLOSED AT IRTS
	Safety circuit not closed at tap 'IRTS' when expected to be closed (for example, before starting a trip)
	C1:At least one landing door hasn't closed (for example, KTS open)
3553	A1:Check why the corresponding door hasn't closed
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A2:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section
	SAFETY CIRCUIT NOT CLOSED AT IHC1
3554	Safety circuit not closed at tap 'ISPT' when expected to be closed (for example, before starting a trip)
	SAFETY CIRCUIT NOT OPENED AT ISK
_	Safety circuit not opened at tap 'ISK' when expected to be opened (for example, while opening door)
3560	C1:The safety circuit at the car door is bridged or a car door safety contact is defective (for example, KTC stuck together)
	A1:Check safety circuit for bridges (for example, plugs) and corresponding door safety circuit contacts for correct operation
	SAFETY CIRCUIT NOT OPENED AT IKTC
3561	Safety circuit not opened at tap 'IKTC' when expected to be opened (for example, while opening door)
- 10	Possible Causes Actions to be taken
1 1	KTC contact detected always closed Check proper KTC operation. Check if bridges are installed on KTC

Code	ode Safety Chain Message (SIAP)	
	SAFETY CIRCUIT NOT OPENED AT IRTS	
3562	Safety circuit not opened at tap 'IRTS' when expected to be opened (for example, while opening door)	
	C1:At Bionic Control: The safety circuit at the landing door is bridged of a landing door safety contact is defective (for example, KTS stuck together)	
	A1:Check safety circuit for bridges (for example, plugs) and corresponding door safety circuit contacts for correct operation	
3564	SAFETY CIRCUIT NOT OPENED AT ISKT4	
	Safety circuit not opened at tap 'ISKT4' when expected to be opened (for example, while opening door)	
ID	Possible Causes Actions to be taken	
1	KV contact is detected as always openCheck proper operation of KV. Check that no bridges are installed on KV	
Code	Safety Chain Message (SIAP)	
	SAFETY CIRCUIT NOT OPENED AT I2KV	
3565	Safety circuit not opened at tap 'I2KV' when expected to be opened (for example, while opening door)	
	SAFETY CIRCUIT NOT OPENED AT I2KTC	
3566	Safety circuit not opened at tap 'I2KTC' when expected to be opened (for example, while opening door)	
	SAFETY CIRCUIT NOT OPENED	
3567	Safety circuit detected not opened. This is a generic error where the specific diagnostics are not possible	
	SAFETY CIRCUIT OPENED AT ISK	
	Safety circuit opened unexpected (for example, during trip) at tap 'ISK'	
	C1:The car has exceeded the hoistway end limit (for example, KNE, KNE_U, KNE_D)	
	A1:Check why the car has exceeded the hoistway end limit. Check log for possible previous reported messages. Release elevator from blocked state (perform reset procedure).	
	C2:The car has exceeded the maximum speed limit (for example, KBV)	
3570	A2:Check why the car has exceeded the maximum speed (ascending or descending overspeed). Check log for possible previous reported messages. Release elevator from blocked state (perform reset procedure).	
	C3:The car safety gear is engaged (for example, KF)	
	A3:Release the car from engaged safety gear (perform reset procedure)	
	C4:The car emergency exit door is not locked (for example, KNA)	
	A4:Close and lock the car emergency exit door	
	C5:Safety circuit wiring faulty or safety circuit contact(s) defective or ba adjusted	
	A5:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section	

Code	Safety Chain Message (SIAP)
	SAFETY CIRCUIT OPENED AT ISPT
	Safety circuit opened unexpected (for example, during trip) at tap 'ISPT'
	C1:The car speed governor rope tension is too low (for example, KSSBV)
	A1:Check why the car speed governor rope tension is too low.
3571	C2:The pit ladder is not retracted
	A2:Retract pit ladder
	C3:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A3:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section
	SAFETY CIRCUIT OPENED AT IRTS
	Safety circuit opened unexpected (for example, during trip) at tap 'IRTS'
	C1:At least one landing door has opened (for example, KTS)
3573	A1:Check why the corresponding door has opened
	C2:Safety circuit wiring faulty or safety circuit contact(s) defective or bad adjusted
	A2:Check general wiring safety circuit and safety circuit contacts at corresponding safety circuit section
	SAFETY CIRCUIT OPENED AT IUSK
	Safety circuit opened unexpected (for example, during trip) at tap 'IUSK'
3575	C1:The power supply of the safety circuit is faulty A1:Check operation of power supply (for example, fuses, input power etc.)
	C2:Earth fault
	A2:Check safety circuit for short circuit to earth
2502	SAFETY CIRCUIT TEST CAR FAILURE
3302	The circuitry for detecting the door illegal bypass is defect on the car
2502	SAFETY CIRCUIT TEST SHAFT FAILURE
3083	The circuitry for detecting the door illegal bypass is defect in the control cabinet
2504	SAFETY CIRCUIT MANUAL BYPASS BEGIN
5504	The maintenance person removed connector on bypass socket
2506	SAFETY CIRCUIT MANUAL BYPASS END
3300	The maintenance person placed "NORMAL" connector on bypass socket
	SAFETY CIRCUIT TEST TAP CAR FAILURE
3587	The controller detects that one of the following taps: IKTC, IRTTC, I2KTC fails to work
3500	SAFETY CIRCUIT TEST FAILURE
<b>JJQQ</b>	The controller detects a generic failure on safety chain
	SAFETY CIRCUIT MANUAL BYPASS INVALID
3589	The maintenance person placed "LAND" connector on bypass socket with automatic door system
3590	SAFETY CIRCUIT MANUAL BYPASS HW FAILURE
	The elevator detects an HW failure on the bypass socket

Code	Safety Chain Message (SIAP)
3591	SAFETY CIRCUIT TEST TAP SHAFT FAILURE
	The controller detects that one of the following taps: ISKT3B, IRTS, I2KV, IRTTV, ISKT4 fails to work
3596	SAFETY CIRCUIT RECOVERY SUCCESSFUL *)
3597	SAFETY CIRCUIT RECOVERY UNSUCCESSFUL *)
3598	SAFETY CIRCUIT RECOVERY DOOR SUCCESSFUL *)
3599	SAFETY CIRCUIT RECOVERY DOOR UNSUCCESSEUL *)

\*) So marked error descriptions are not released officially by R&D. If necessary, contact a specialist or the Locarno hotline for more information.

Code	Communication Message	
	BUS SCAN FAILED	
	At startup the controller checks if all bus nodes (for example, landing operating panels) are communicating with the main controller. This error occurs if this check fails. Note that this error does not occur if an additional node is connected to the bus.	
3601	C1:Bad connection to any bus node (for example, landing operating panel)	
	A1:Check generally bus wiring. Check bus connector on controller main board and at all bus nodes.	
	C2:Bad bus power supply	

A2:Check supply voltage on bus for instability

#### C3:EMC problems

A3:Check entire bus for interferences

#### LOP COUNT FAILED

After configuration of the bus nodes (for example, landing operating panels) a check of all possible node addresses is performed and the corresponding IO function mapping get read. This error occurs if there is a communication problem to any bus node during this phase.

C1:Bad connection to any bus node (for example, landing operating panel)

3602 A1:Check generally bus wiring. Check bus connector on controller main board and at all bus nodes. Redo LOP count (CF00, LE00).

#### C2:Bad bus power supply

A2:Check supply voltage on bus for instability.Redo LOP count (CF00, LE00).

#### C3:EMC problems

A3:Check entire bus for interferences. Redo LOP count (CF00, LE00).

#### Communication Message

#### **BIOBUS NODE DEAD**

During operation the communication to a bus node (for example, landing operating panel) has failed. Note that this error occurs every time the communication got lost to a single bus node.

### C1:Bad connection to any bus node (for example, landing operating panel)

## 3603 A1:Check generally bus wiring. Check bus connector on controller main board and at all bus nodes.

#### C2:Bad bus power supply

A2:Check supply voltage on bus for instability

#### C3:EMC problems

A3:Check entire bus for interferences

#### COM DOOR NODE DEAD

3635

Code

The communication to the door operator is lost

ID	Possible Causes	Actions to be taken
1	Door node communication disconnected	Check the according to communication bus connectors and reconnect
2	Communication failure due to faulty shielding of the bus communication cables	Check the shielding of the bus communication cables and restore

#### Code Overlay Message

#### AAT CALL SIM START

**4050** This event informs that calls are automatically generated and a certain number of trip would be executed.

#### AAT CALL SIM TERMINATED

**4051** This event informs that the automatic calls generator has been disabled since the amount of trip requested has been reached.

#### SAFETY DEVICE CAR UNINTENDED MOVEMENT

A elevator safety device has detected that the car has performed a uncontrolled movement (for example, left the door zone with door open).

#### 4305 C1:Serious failure at traction means or brake

A1:Check carefully reason for unintended car movement and resolve problem. Release elevator from blocked state by dedicated reset of the tripped safety device.

#### TM RESIDUAL STRENGTH WARNING

Traction media residual strength insufficient warning

## 4601 C1:The number of bending cycles respectively the trip count approaches the service limits.

A1: Initiate replacement of traction media before the end of the estimated lifetime.

#### TM RESIDUAL STRENGTH INSUFFICIENT

Traction media residual strength insufficient

4602 C1:The maximal permitted bend cycle count or trip count for the traction media had been exceeded

#### A1: Replace traction media

Code	Overlay Message
	TM BENDING STRESS COUNT RESET
4603	Traction media bending stress counter reset
	C1:The maintenance person enters a new STM manufacturing date: the bending counter has been reset (set to 0) A1:None
	TM BENDING STRESS WARNING LIMIT CHANGED
4604	The maximum permitted traction media bending stress count warning limit wa changed. The bending stress warning limit in% of the maximum permitted bending stress count.
	C1: The maintenance person enters a new STM manufacturing date: the bending counter has been reset (set to 0)
	A1: None
	TM BENDING STRESS MAXIMUM CHANGED
4605	The maximum permitted traction media bending stress count was changed. The new maximum permitted bending stress counts.
	TM AGING CLOCK FAILURE
	The elevator clock is not running or is delayed.
4606	C1:The date of the elevator clock is not set or is wrong. This could be caused by a loss of mains and battery power.
	A1:Set the correct date.
	TM MAX AGE WARNING
	The age of the traction media approached the end of life, initiate its replacement.
4607	C1:The age of the traction media reached the defined percentage of the service limit.
	A1:Initiate replacement of traction media before the end of the estimate lifetime.
	TM MAX AGE EXCEEDED
	The maximum permitted age of the traction media is exceeded, it shall be replaced.
4608	C1:The maximum permitted age of the traction media was exceeded.
	A1:Replace the traction media.
	C2:The elevator clock date is not correct.
	A2:Set the correct date.
	TM RES STRENGTH MONITORING VIRGIN STORAGE DETECT
4610	Either the master or backup storages for traction media insufficient strength monitoring is virgin (empty). The virgin storage is initialized with a copy of th STM Monitoring data.
·	C1:The controller founds that one of the redundant media does not contains any data. The controller rebuilds the STM information. A1:None.
	TM RES STRENGTH MONITORING REF KEY MISMATCH
4611	Reference key mismatch of master and backup storages of traction media insufficient strength monitoring. The reference key consists of the manufacturing date of the oldest traction media and the commission number
	C1:Commissioning number differs between controller and chip card

#### Overlay Message

#### TM RES STRENGTH MONITORING DATA MISMATCH

Data mismatch between master and backup storages of traction media insufficient strength monitoring. The reference keys of both storages are identical. The highest STM trip count value and the lowest STM trip count limit are replicated to both storages.

C1:The controller found different STM bending counter in the redundant storages.

A1:None

Code

4612 C2:The controller found different STM bending limits in the redundant storages. The new value is taken from chip card.

A2:None

C3:The controller found different STM bending warning levels in the redundant storages. The new value is taken from chip card.

A3:None

C4:The controller found different SBPT in the redundant storages. The new value is taken from chip card.

A4:None

#### TM RES STRENGTH MONITORING BACKUP MISSING

- 4613 Missing backup storage of traction media insufficient strength monitoring.
  - C1: STM data cannot be saved on chip card

A1:Replace chip card with one with 1k

#### TM DATA MEMORY RECOVERY SUCCESS

4615 Successful recovery of traction media data storage memory

C1:A mismatch in STM data has been found and solved.

A1:Check previous log entries to see the reason of mismatch.

TM DATA MEMORY RECOVERY UNSUCCESSFUL

Recovery of traction media data storage memory was not successful. The reference key did not match any of the storages or restore failed.

#### C1:Reference key entered is wrong.

A1:Enter the correct reference key for the elevator from the maintenance log.

4616 C2:Fault of one or both storage devices.

A2:Replace the faulty storage device. See previous log entry for detail.

C3:Both storage devices are from a different elevator or virgin.

A3:Re-enter the STM installation data from the maintenance log.

C4:STM chip card option is missing

A4:Replace chip card with one with STM option enabled

#### TM INSTALLATION DATA ENTERED

Traction media installation data had been entered successfully.

# 4617 C1:The procedure of configuring the STM parameter is terminated A1:Reset the controller

#### TM STRESS COUNT ENTERED

The STM stress count (trip or tend cycle counter) was set.

4618 C1:A new STM bending counter has been entered. The advanced STM configuration has been used. A1:None

Code	Overlay Message
4619	TM AGING CLOCK RECOVERY SUCCESS
	The failure of the internal clock had been recovered.
	C1:The maintenance person set the clock
	A1:None
	TM AGING CLOCK RECOVERY FAILED
	The failure of the internal clock had not been recovered within the permitted time.
	C1:The internal clock had been stopped due to a loss of mains and battery power.
4620	A1:Set date and time.
	C2:The controller expects soon an STM expiration
	A2:Set date and time.
	C3:The controller uses all the 210 days granted to set the correct date and time
	A3:Set date and time.
	TM RETAINER FAILURE
4621	The failure of the belt retainer has been detected. Only recall, installation and inspection movements are allowed
	C1:The belt retainer has reported a problem
	A1:Inspect belt, inspect retainer.
4622	TM RETAINER RECOVERY SUCCESS
	The belt retainer has encouraged from an error
	TM ECM ERROR
4623	The STM conductivity test has failed
	C1:Ground failure on the belt
	A1:Inspect the belts
4624	TM_ECM _WARNING
	The conductivity test is out of range.
	TM ECM UNAVAILABLE
	The conductivity device for STM:- Is no more alive (heartbeat lost)- Reports self check failure- Reports calibration error
	C1:ECM calibration failure
4625	A1:None
	C2:ECM heartbeat is lost
	A2:Check communication cable
	C3:ECM reports a self test failure
	A3:Replace hardware
4626	TM ECM AVAILABLE
7020	The conductivity device for STM is back in normal monitoring operation.

Code	Overlay Message	
	TM RES AGING MONITORING DATA MISMATCH	
4627	Data mismatch between master and backup storages of traction media aging monitoring. The reference keys of both storage are identical. The aging limit and the aging warning limit differs on both storages.	
	C1:Manufacturing date differs A1:Activate menu 190 and enter the correct belt manufacturing date.	
	C2: Aging limit differs	
	A2:Clear the fatal error	
	C3:Aging warning limit differs	
	A3:Clear the fatal error	
	TM BENDING STRESS COUNT ENTERED	
4620	Traction media bending stress counter entered	
4030	C1:There is a problem with the cabling.	
	A1:Check the proper cabling of the overlay box.	
	TM BENDING STRESS COUNTER MISMATCH	
4631	This error is generated when there is a mismatch between bending counter in EEPROM and on SIM card.	
	TM MANUFACTURING DATE MISMATCH	
4632	This error is generated when there is a mismatch between manufacturing date in EEPROM and on sim card	
	OVERLAY HEARTBEAT MISSING	
	The heartbeat from the overlay is missing. The main controller did loose for some time the connection to the overlay board. In case this error is detected the bionic controller gets out of the group and continues to serve all calls in a simplex fashion. If the connection to the overlay is recovered the information OVERLAY HEARTBEAT RECOVERED is recorded in the log as well.	
4701	C1:There is a problem with the cabling	
	A1:Check the proper cabling of the overlay box.	
	C2:The overlay board has a problem	
	A2:	
	C3:The overlay did perform a reset	
	A3:	
	OVERLAY HEARTBEAT RECOVERED	
	The elevator control starts to receive the heartbeat from the overlay.	
4703	C1:This information is stored in the log of events if a previously lost connection to the overlay board is now recovered.	
	A1:none	
	OVERLAY ELEVATOR IN GROUP MISSING	
	Overlay component are missing in the group.	
4705	C1:This error is inserted in the log if one or more controllers are no longer part of the group. It is possible that the error is detected only by some elevators of the group.	
	A1:To better understand what causes the issue it is advised to check the overlay monitoring menu (HMI menu $30 > 309$ ) as the values there can be a certain help in pinpointing where the group problem might be.	

#### Code

Code

5003

5004

#### Overlay Message

#### OVERLAY ALL ELEVATORS ARE IN GROUP

Overlay component are all present

# 4706 C1:A previously reported error OVERLAY ELEVATOR IN GROUP MISSING is now recovered.

A1:None

#### Telemonitoring Message

#### RM NO PHYSICAL DATA CONNECTION TO CC

The data connection from the elevator (remote monitoring data communication device, for example, modem) to the control center hasn't physically established or was physically interrupted

### 5002 C1:Connection physically interrupted or bad

A1:Check data connection (for example, phone line)

C2:Data speed negotiation failed (for example, at modem)

A2:Check configuration (for example, country code)

#### **RM DATA LINE TO CC BUSY**

The data connection from the elevator (remote monitoring data communication device, for example, modem) to the control center hasn't physically established because the line was busy

## C1:Control center not able to answer call of elevator (for example, too busy)

A1:Do nothing. Wait for next calling attempt.

#### **RM NO LOGICAL DATA CONNECTION TO CC**

The data connection from the elevator (remote monitoring data communication device, for example, modem) to the control center hasn't logically established or was logically interrupted

#### **C1:Authentication failure**

A1:Check parameterization of remote monitoring (for example, password)

#### **RM MAX DATA CONNECTION ATTEMPTS TO CC EXCEEDED**

**5005** There were several failed attempts (typically 5) from the elevator control to establish the data connection to the control center. No further attempts are performed within the next 24 hours. See previous logged errors to get the reason of the problem.

#### **RM MAX DATA CONNECTION TIME TO CC EXCEEDED**

The maximum connection time between the elevator (remote monitoring data communication device, for example, modem) to the control center has exceeded. The connection is aborted.

#### C1:Too slow data transmission due to bad signal connection A1:Check quality of data connection
#### **Telemonitoring Message**

## RM DATA COMMUNICATION DEVICE DEAD

The communication between the elevator control and the remote monitoring data communication device (for example, modem) has failed

C1:The connection between the elevator control board and the remote monitoring data communication device (for example, modem) is faulty

A1:Check data connection. Attempt to do a new call using menu 126. Replace SCPU, ISCPU or SMICHMI/SMICFC board.

5007 C2:Remote monitoring data communication device (for example, modem) defective

A2:Replace remote monitoring data communication device

C3:The communication device was configured and working but the communication to it was purposefully blocked to use the terminal application (not the CADI) for more that 15 minutes.

A3:The terminal application shares the same physical serial port of the modem. Set the menu 106 to 0.

#### **RM DATA COMMUNICATION DEVICE ALIVE**

**5008** The communication between the elevator control and the remote monitoring data communication device (for example, modem) has reestablished

## **RM CLSD FAILURE**

Code

The communication line sharing device has detected a failure of its internal electronics.

**5009** Note that the telealarm device is still operable, but back-calls from the control center to the telealarm or telemonitoring device are not possible anymore.

#### C1:Device internal failure

A1:Replace the CLSD PCB

Code	Car Alarm Message
9001	CAR ALARM BUTTON PRESSED
0001	Log alarm button states for enhanced diagnostic (misuse)
8002	CAR ALARM BUTTON RELEASED
0002	Log alarm button states for enhanced diagnostic (misuse)
8003	CAR ALARM RELAY ACTIVATED
0005	Log alarm relay states for enhanced diagnostic (misuse)
8004	CAR ALARM RELAY DEACTIVATED
0004	Log alarm relay states for enhanced diagnostic (misuse)
	CAR INVALID ALARM DETECTED
8005	Alarm button pressed or relay activated was received during the usual filtering time
	CAR ALARM FILTERED
8006	An alarm was received in normal mode but with the door not fully open or with the car not traveling
	CAR VALID ALARM DETECTED
8007	An alarm was received during the time when the alarm circuit discriminator is not active.
8008	CAR ALARM FORWARDED
	An alarm was received while the discriminator was active, the system tried to free the passenger in time but did fail and thus the alarm is automatically forwarded by the system.

Code	Car Alarm Message
8009	CAR ALARM DEVICE OFF HOOK
	The alarm device is on the line for an alarm call.
8010	CAR ALARM DEVICE ON HOOK
	The alarm device is no longer on the line for an alarm call.
	CAR ALARM TEST ENABLED
8011	A valid COP alarm button sequence has been executed or the appropriate menu (134) has been activated. The elevator informed telealarm device that next alarm would be a test alarm.
8012	CAR ALARM TEST STARTED
0012	An alarm button pressed has been detected and is a test one.
8013	CAR ALARM TEST END
0015	An alarm button pressed has been detected and was a test one.
	CAR ALARM TEST DISABLED
8014	This message means that no test alarm has been performed on the COP keyboard. This event is coming after a predefined time window (usually 30s) where the maintenance person can perform a test alarm.
8017	MAIN SWITCH OFF
	Main switches has been switched off (JH).
	MAINS POWER FAILURE
8018	Phase of power line is lost for at least 1200 ms- Power phase has rotated for at least 1200 ms.
8019	CAR EMERGENCY LIGHT DEFECT
8019	Emergency car light is broken.
8020	CAR EMERGENCY LIGHT OK
	Emergency car light is available
	CAR ROOF TEMPERATURE OK
8021	Car roof temperature is in range. See range thresholds CF22PA27 and CF22PA28
	CAR ROOF TEMPERATURE OUT OF RANGE
8022	Car roof temperature is not in range. See range thresholds CF22PA27 and CF22PA28
8023	CAR ALARM BUTTON DEFECT
0020	Alarm button on COP is defect.
8024	CAR ALARM BUTTON OK
UV27	Alarm button on COP is OK.
8025	ELECTRICAL INDICATOR COP FAIL
	Electrical indicator on COP are defect.
8028	SELF TEST TRIP PERFORMED
	Self test trip has been triggered. See parameters CF22PA7 and CF22PA8.
8030	ECU TEMPERATURE OK
	Temperature in the ECU is normal.
8021	ECU TEMPERATURE OUT OF RANGE
0001	Temperature in the ECU is out of range.
8033	MAIN SWITCH ON
8032	Main switches (JH) has been switched on.

8033 MAINS POWER OK Mains power is correctly detected. CAR ALARM TEST FAILURE	
Mains power is correctly detected.	
CAR ALARM TEST FAILURE	
8034	
Automated alarm test fails.	
CAR ALARM TEST OK	
Automated alarm test passed.	
ELECTRICAL INDICATOR COP OK	
Electrical indicators on COP are OK	
CAR DAILY TESTS NOT PERFORMED	
8038 This event is logged in case of none of the following tests has been perfo in the previous 24h:- COP indicator- LOP indicator- Alarm- Emergency ca	rmed ar
CAR ROOF TEMPERATURE BROKEN MISSING	
Temperature sensor provides abnormal values	
The temperature is above 120° C	
or the temperature is below -40° C	
ID Possible Causes Actions to be taken	
1 Temperature sensor broken Replace sensor	
2 Temperature sensor missing Check cabling	

#### Code

## Switch Controller Message

SW OUT OF RAM

Controller has finished the RAM

## 4.9.6 EN81-20/50 Door Bypassing Function

- The door bypassing function provides a means for maintenance person to make the troubleshooting for car door or landing door safety contacts.
- Maintenance person can use the HMI function "Safety chain tap name display to determine which safety contact is open, see info below.
- The maintenance person handles the doors (car door or landing door) bypass device with a defined plug to move the car in recall or inspection mode to check for the broken door safety contacts.
- The bypass connector is monitored by the controller and the elevator will be blocked if a false plug has been detected by the controller.

Safety Chain

Bypassing Car Door Precondition: No car movement

Safety Chain		
	Step	Procedure
	1	Activation:
		<ul> <li>Maintenance person disconnects the BYPASS.NORMAL plug from the BYPASS connector on SMICFC</li> </ul>
		<ul> <li>HMI shows status "88"</li> </ul>
		<ul> <li>Note: there are no restrictions when the plug can be disconnected</li> </ul>
		<ul> <li>All drive and door movements are blocked</li> </ul>
		<ul> <li>All car calls and landings calls are canceled and disabled.</li> </ul>
	2	Operation:
		<ul> <li>Maintenance person connects the BYPASS.CAR plug to the BYPASS connector on SMICFC</li> </ul>
		<ul> <li>HMI shows status "54" and safety taps looks like this:</li> </ul>
		-000***! 02???54
		[604620_014; 03.12.2015]
		<ul> <li>Check all landing doors are closed and mechanically locked</li> </ul>
		<ul> <li>Now the recall or inspection operations can be carried out with bypassed car door safety contacts</li> </ul>
		<ul> <li>An audible beep and a blinking lamp is active when the car moves with bypassed safety contacts.</li> </ul>
	3	Deactivation:
		<ul> <li>Deactivate the recall operation or</li> </ul>
		<ul> <li>If necessary, inspection operations must be exited properly as described above</li> </ul>
		<ul> <li>If necessary, TSD21 safety system must be reset</li> </ul>
		<ul> <li>Maintenance person disconnects the BYPASS.CAR plug from the BYPASS connector on SMICFC</li> </ul>
		<ul> <li>Maintenance person reconnects the BYPASS.NORMAL plug to the BYPASS connector on SMICFC</li> </ul>
		Elevator returns to normal mode.
Bypassing Landing Door Safety Chain	Precon	idition: No car movement
-	Step	Procedure
	1	Activation

- Maintenance person disconnects the BYPASS.NORMAL plug from the BYPASS connector on SMICFC
- HMI shows status "88"
- Note: there are no restrictions when the plug can be disconnected
- All drive and door movements are blocked
- All car calls and landings calls are canceled and disabled.

#### 2 Operation:

- Maintenance person connects the BYPASS.LOCK plug (for bypassing landing door lock safety contact) to the BYPASS connector on SMICFC
- HMI shows status "53" and safety taps looks like this:



[604620\_015; 03.12.2015]

- Check all landing doors are closed and mechanically locked
- Now the recall or inspection operations can be carried out with bypassed landing door safety contact or bypassed landing door lock safety contact
- An audible beep and a blinking lamp is active when the car moves with bypassed safety contacts.
- 3 Deactivation:
  - Deactivate the recall operation or
  - If necessary, inspection operations must be exited properly as described above
  - TSD21 safety system must be reset
  - Maintenance person disconnects the BYPASS.LOCK plug from the BYPASS connector on SMICFC
  - Maintenance person reconnects the BYPASS.NORMAL plug to the BYPASS connector on SMICFC
  - Elevator returns to normal mode.

Safety chain tap name display (since V13.xx, for SMICFC2x HW only).

In case the HMI is showing the main information page and the fitter presses the "UP" button, the HMI shows the name of the first opened tap of the safety chain instead of taps display. (See graphic below shown)

Pressing "UP" button again the HMI shows main information page.

Note: The bridging done by for example recall panel or SUET does not affect the evaluation of first opened tap.



A Press "UP" button

In case of fully closed safety chain, HMI shows "CLOSED":



[604639\_014; 26.11.2015]

In case of unknown safety chain tap to display, HMI shows "UNKNOWN":



[604639\_015; 26.11.2015]



## 4.10.2.2 Maintenance Checks

**Brake Noise** 

Step	Procedure
1	Check the brake for noise.
2	If the brake makes a metallic sound when opening and/or closing further investigation is required, and the complete brake may need to be replaced.

## Air Gap Check



The air gap of new brakes should be in the range of 0.3–0.4 mm.

Step	Procedure
1	Clean the brake housing to prevent that the air gap of the brake magnet is contaminated with dirt.
2	Insert feeler gauges (4) of various thicknesses on each brake near the adjusting screw (1) to check the air gap between the brake armature (3) and the brake yoke (2). Insert the feeler gauge minimum 20 mm deep.
3	If a feeler gauge of 0.55 mm passes through the air gap, replace the brake within a year.
4	If a feeler gauge of 0.60 mm passes through the air gap, replace the brake within a week.
5	If a feeler gauge of 0.65 mm passes through the air gap, put the elevator out of service and replace the brake.



Adjusting screw Brake yoke Brake armature 1 4 2

- Feeler gauge Air gap 5
- 3

	4.10.2.	3 Brake Test During Maintenance
A DANGER	<b>Defect</b> Operat	<b>ive Brakes (on the machine)</b> ing an elevator with defective brakes will result in serious injury or death.
	lf the b the bra	rakes are found to be defective, put the elevator out of service immediately until kes have been replaced and tested successfully.
Dynamic Full Brake Test Upward (test 15)		
Expected Test Result	In this t conditio	est, the brake stops the empty car in the upward direction under emergency ons.
Required Test	– Cai	load = 0 % of GQ
Conditions	– Tra	vel speed = 100 % of VKN
	– Tra	vel direction = Upward
Test Procedure		
	Step	Procedure
	1	On HMI, activate the test mode as follows:
		a) <b>Press "OK".</b> HMI shows [10//_0].
		b) Select "Test mode". HMI snows [20//_].
		c) Press "OK". HMI shows [20//_0].
		a) Activate the test mode. Him shows $[20/\_/_1]$ .
		<ul> <li>The car travels to the control cabinet floor and the door opens.</li> </ul>
		<ul> <li>The door remains open. HMI shows [//].</li> </ul>
	2	On HMI, activate the required test as follows:
		a) Select "Start Full Brake Test Up". HMI shows [//15].
		b) Press "OK". HMI shows [15//_1].
		<ul> <li>The door closes.</li> </ul>
		<ul> <li>The door closes.</li> <li>The car travels to the bottom floor. The door remains closed.</li> </ul>
		<ul> <li>The door closes.</li> <li>The car travels to the bottom floor. The door remains closed.</li> <li>HMI shows [15//_2], indicating "Test ready to run".</li> </ul>

<ul> <li>3 On HMI, press "OK" to start the test.</li> <li>The car travels to the top floor. During the travel, HMI shows [15/_/_]. "15" blinks.</li> <li>When the car reaches VKN, HMI shows [15/_/_1],</li> <li>The control triggers an emergency stop.</li> <li>The machine brake stops the car.</li> <li>Test passed if: <ul> <li>The car stops below the KSE-U magnet (= KSE-U magnet not triggered).</li> <li>HMI shows [15/_1/_], indicating "Full brake test up successful".</li> </ul> </li> <li>Test failed if: <ul> <li>The car stops above the KSE-U magnet (= KSE-U magnet triggered).</li> <li>HMI shows [15/_0/_5], indicating "Full brake test up failed".</li> </ul> </li> <li>If the test failed, put the elevator out of service immediately and replace the brake.</li> <li>4 On HMI, press "ESC" to deactivate the test. HMI shows [_//15].</li> <li>5 On HMI, deactivate the test mode as follows: <ul> <li>a) Press "ESC". HMI shows [20//_1].</li> <li>b) Deactivate the test mode. HMI shows [20//_0].</li> <li>c) Press "OK". HMI shows [20//_0].</li> <li>d) Press "ESC". HMI shows [-/7].</li> </ul> </li> </ul>	Step	Procedure					
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<ul> <li>5 On HMI, deactivate the test mode as follows:</li> <li>a) Press "ESC". HMI shows [20//_1].</li> <li>b) Deactivate the test mode. HMI shows [20//_0].</li> <li>c) Press "OK". HMI shows [20//_0].</li> <li>d) Press "ESC". HMI shows [//].</li> <li>The car performs a synchronization travel.</li> </ul>	4	On HMI, <b>press "ESC"</b> to deactivate the test. HMI shows [//15].					
<ul> <li>a) Press "ESC". HMI shows [20//_1].</li> <li>b) Deactivate the test mode. HMI shows [20//_0].</li> <li>c) Press "OK". HMI shows [20//_0].</li> <li>d) Press "ESC". HMI shows [//].</li> <li>The car performs a synchronization travel.</li> </ul>	5	On HMI, deactivate the test mode as follows:					
<ul> <li>b) Deactivate the test mode. HMI shows [20/_/_0].</li> <li>c) Press "OK". HMI shows [20/_/_0].</li> <li>d) Press "ESC". HMI shows [//].</li> <li>The car performs a synchronization travel.</li> </ul>		a) Press "ESC". HMI shows [20//_1].					
<ul> <li>c) Press "OK". HMI shows [20//_0].</li> <li>d) Press "ESC". HMI shows [//].</li> <li>The car performs a synchronization travel.</li> </ul>		b) Deactivate the test mode. HMI shows [20/_/_0].					
d) <b>Press "ESC".</b> HMI shows [/]. The car performs a synchronization travel.		c) <b>Press "OK".</b> HMI shows [20//_0].					
The car performs a synchronization travel.		d) <b>Press "ESC".</b> HMI shows [/].					
		The car performs a synchronization travel.					

## Dynamic Single Brake Test Upward (test 65 modified)

NOTICE	<ul> <li>Uncontrolled Movement of the Car (during brake tests)</li> <li>Uncontrolled movement of the car could result in damage to the installation.</li> <li>Unplug the brake test connector immediately when the car starts to move during the test.</li> </ul>
i	<ul> <li>The dynamic single brake test upward:</li> <li>Only do the dynamic single brake test upward if the full brake test succeeded.</li> <li>Requires two test connectors TEST-MGB and TEST-MGB1 as special tools.</li> </ul>
i	<ul> <li>This test is referred to as "test 65 modified" in this manual because it is a modified version of acceptance test 65.</li> </ul>
_	<ul> <li>As the test acceptance criterion depends on the rated balancing factor (KG), it is necessary to first determine the rated KG of the installation to be tested.</li> <li>Applicable values are KG = 50 % and KG &lt; 50 %.</li> </ul>

Expected TestIn this tResultcondition	est, a single brake stops the empty car in the upward direction under emergency ons.
Boguired Test	
Conditions Trav	10ad = 0% of $30%$ of $3%$
- 11a Tro	vel direction = Lipword
– 11a	
Test Procedure Step	Procedure
1	Calculate the balancing factor, KG.
	Balancing factor (KG) = $100 \text{ x}$ $\frac{[\text{counterweight mass (GG) - car mass (GK)]}}{ \text{load (GQ)} }$
2	On HMI, activate the test mode as follows:
_	a) <b>Press "OK"</b> . HMI shows [10/ / 0]
	b) Select "Test mode" HMI shows [20/ / ]
	c) <b>Press "OK"</b> HMI shows [20/ / 0]
	d) Activate the test mode. HMI shows [20/ / 1].
	The cortravels to the control solution floor and the door approximately $\frac{1}{2}$
	- The door remains open HMI shows $[//]$
3	On HMI, activate the required test as follows:
	a) Select "Start Single Brake lest Up". Hill snows [_/_/65].
	b) <b>Press "OK".</b> HMI shows [65//_1].
	<ul> <li>The door closes.</li> </ul>
	<ul> <li>The car travels to the bottom floor. The door remains closed.</li> </ul>
	<ul> <li>HMI shows [65//_2].</li> </ul>
4	a) Be ready to remove the test connector immediately in case the LED LUET turns off.
	The LED LUET turns off when, <b>unintentionally,</b> the car moves out of the door zone.
	<ul> <li>In control cabinet, keeping an eye on the LED LUET, plug the test connector TEST-MGB into the socket MGB-T on PCBA SNGL or PCBA SEM3x.</li> </ul>
	<ul> <li>The (single) brake is expected to prevent the car from moving.</li> </ul>
	<ul> <li>If unintentional car movement occurs, the elevator may remain in operation but the brake has to be replaced within 4 weeks.</li> </ul>
5	On HMI, press "OK".
	<ul> <li>The controller checks that the test connector is plugged in correctly.</li> </ul>
	<ul> <li>HMI shows [65//_3], indicating "Single brake test up ready to run".</li> </ul>
6	On HMI, <b>press "OK"</b> to start the test.
	<ul> <li>The car travels to the top floor. During the travel, HMI shows [65//_].</li> <li>"65" blinks.</li> </ul>
	<ul> <li>When the car reaches VKN, HMI shows [65//_1]. "65" still blinks.</li> </ul>
	<ul> <li>The control triggers an emergency stop.</li> </ul>
	<ul> <li>The machine brake stops the car.</li> </ul>
	– HMI shows [65//_4].
7	Unplug the test connector TEST-MGB on PCBA SNGL or PCBA SEM3x.

8	On HMI, <b>press "OK"</b> and verify the acceptance criteria of the test as follows:
	For elevator with rated KG = 50 %:
	<ul> <li>First test run:         <ul> <li>Test passed if the car stops below KNE (= KNE not triggered)</li> <li>Test failed if the car hits the KNE (= KNE triggered).</li> <li>Repeat the test one more time.</li> </ul> </li> </ul>
	<ul> <li>Second test run:</li> <li>Test passed if the car stops below KNE (= KNE not triggered)</li> <li>Test failed if the car hits the KNE (= KNE triggered).</li> <li>Replace the brake system within 4 weeks.</li> </ul>
	For elevator with <b>rated KG &lt; 50 %:</b>
	<ul> <li>Test passed if: <ul> <li>The car stops below the KSE-U magnet (= KSE-U magnet not triggered).</li> <li>HMI shows [65/_1/_], indicating "Single brake test up successful".</li> </ul> </li> <li>Test failed if: <ul> <li>The car stops above the KSE-U magnet (= KSE-U magnet triggered)</li> <li>HMI shows [65/_0/_5], indicating "Single brake test up failed".</li> </ul> </li> <li>If the test failed, replace the brake system within 4 weeks.</li> </ul>
9	On HMI, <b>press "ESC"</b> to deactivate the test. HMI shows [//65].
10	<ul> <li>On HMI, deactivate the test mode as follows:</li> <li>a) Press "ESC". HMI shows [20/_/_1].</li> <li>b) Deactivate the test mode. HMI shows [20/_/_0].</li> <li>c) Press "OK". HMI shows [20/_/_].</li> <li>d) Press "ESC". HMI shows [/].</li> </ul>
	The car performs a synchronization travel
11	Repeat the whole test procedure with the second test connector TEST-MGB
12	<b>In case of rated KG &lt; 50 % only:</b> If the dynamic single brake test upward failed, make sure that the test load is available for the tests (with loaded car) after replacement of the brake system.
4.10.2.4	4 Machine and Brake Replacement Tests
Step	Procedure
1	Calculate the balancing factor, KG.
	Balancing factor (KG) = 100 x [counterweight mass (GG) - car mass (GK)]
	Tringen

Trigger: KG Balancing Factor [XX] = 50: Tests after brake replacement can be performed with empty car Perform 'Dynamic Full Brake Test Up' (Test 15) Perform 'Dynamic Single Brake Test UP' (Test 65)

KG Balancing Factor [XX] = 40:

Test after brake replacement must be performed with 100 % and 125 % of GQ Perform 'Dynamic Full Brake Test Down' (Test 14) Perform 'Dynamic Single Brake Test Down' (Test 64)

Verifying of the **Balancing Factor** 

## Dynamic Full Brake Test Up (Test 15)

Expected Test Result

In this test, the brake stops the empty car in the upward direction under emergency conditions.

**Required Test** Conditions

Car load 0 % GQ т. 100 0/ \///N - 1 . .....

**Test Procedure** 

Iravel	speed 100 % VKN
Car tra	avel direction UP
Step	Procedure
1	Active 'Test Mode'
	– Press 'OK' → [10/_/_0]
	– Select 'Test mode' [20//_]
	– Press 'OK' → [20/_/_0]
	– Activate 'Test mode' → [20/_/_1]
	– Press 'OK' → [20//_1]
	The car travels to the control cabinet floor and opens the door. The door remains open $\Rightarrow$ [_/_/]
2	Select 'Full Brake Test Up'
	<ul> <li>Select "Start 'Full Brake Test Up" [//15]</li> </ul>
	– Press 'OK' → [15//_1]
	The door closes
	The car travels to the bottom floor
	I he door remains closed
3	Broce <b>'OK'</b>
	- Pless OR
	<ul> <li>The car starts a trip to the top floor</li> </ul>
	– HMI display shows a blinking "15" → [15/_/_]
	<ul> <li>The car reaches rated speed</li> </ul>
	– HMI display shows a blinking "15" → [15//_1]
	<ul> <li>The controller triggers an emergency stop below the KSE-U magnet.</li> </ul>
	Passed: The car has stopped below KSE-U and the HMI displays
	'Full Brake Test Up' was successful ➔ [15/_1/].
	Failed: The car has stopped above the KSE-U magnet and the HMI displays
	'Full Brake Test Up failed' $\rightarrow$ [15/_0/_5]. The elevator must be put out of service immediately until the brakes have been replaced and re-tested.
4	Deactivate 'Full Brake Test Up'
	– Press ESC → [/_/15]
5	Deactivate 'Test Mode'
	– Press ESC → [20//_1]
	<ul> <li>Change to "Deactivate Test Mode"[20//_0]</li> </ul>
	– Press 'OK' → [20//_]
	– Press ESC

The elevator performs a synchronization trip.

## Dynamic Single Brake Test Upward (Test 65)

Expected Test Result In this test, a single brake stops the empty car in the upward direction under emergency conditions.

Required Test Conditions	Car loa	ad	0 % GQ
	Travel	speed	100 % VKN
	Car tra	avel direction	UP
Test Procedure			
	Step		Procedure
	0	The inspector r (Brake Test Co elevator.	nust have the two test plugs <b>TEST-MGB</b> and <b>TEST-MGB1</b> nnectors) in his tool box. The plugs are not delivered with the
		Make sure the	load measuring device is enabled.
		The 'Single Br	ake Test Up' must not be performed if the 'Full Brake Test
		Up' was not pa	assed.

Step	Procedure					
1	Active 'Test Mode'					
	– Press 'OK' → [10//_0]					
	– Select 'Test mode' [20//]					
	– Press 'OK' → [20//_0]					
	– Activate 'Test mode' → [20//_1]					
	– Press 'OK' → [20/_/_1]					
	The car travels to the control cabinet floor and opens the door. The door remains open $\clubsuit$ [_/_/]					
2	Select 'Single Brake Test Up'					
	<ul> <li>Select "Start 'Single Brake Test Up" [/_/65]</li> </ul>					
	– Press 'OK' → [65//_1]					
	The door closes					
	The car travels to the bottom floor					
	The door remains closed					
3	Prepare 'Single Brake Test Up'					
	<ul> <li>Plug the "TEST-MGB" connector into the "MGB-1" socket at control cabinet on the SNGL or SEM3y PCB)</li> </ul>					
	Attention:					
	Monitor LUE I after plugging in the MGB connector. If LUE I is cleared the					
	immediately The elevator can remain in operation AND the replacement of					
	brake system is mandatory within next 4 weeks.					
	<ul> <li>HMI display shows [65/ / 2]</li> </ul>					

	Step		Procedure
	4	- Press OK	
		<ul> <li>The system ch</li> </ul>	ecks if the "TEST-MGB" connectors is inserted
		<ul> <li>HMI display sh</li> </ul>	iows [65//_3] = "Test Single Brake Up" ready to start
	5	Start 'Single Bral	e Test Up'
		<ul> <li>Press 'OK'</li> </ul>	
		- The car starts	a trip to the top floor
		<ul> <li>HMI display sł</li> </ul>	hows a blinking "65" $\rightarrow$ [65/ / 1
		<ul> <li>The car reach</li> </ul>	es rated speed
		<ul> <li>HMI display sł</li> </ul>	ows a blinking "65" → [65/ / 1]
		- The controller	triggers an emergency stop below the KSE-U magnet
		<ul> <li>HMI display sł</li> </ul>	lows [65//_4]
	6	<ul> <li>Unplug the "TI cabinet (on the</li> </ul>	EST-MGB" connector from the "MGB-T" socket at control
		- HMI display sh	lows [65//_4]
	7	Acceptance Crite	ria for Periodic Inspection in Existing Installation
		– Press ' <b>OK</b> '	
		Deced. The ser	as standed below KSE II and the UNI displays
		'Dynamic Single P	rake Test Lip' was successful $\rightarrow$ 165/ 1/ 1
		<b>Eailed:</b> The car be	rake rest of was successful $\rightarrow$ [05/_1/].
		'Dynamic Single B	rake Test I In' failed $\rightarrow$ [65/ 0/ 5] The elevator can remain
		in operation AND mandatory.	the replacement of brake system within next 4 weeks
	8	Deactivate 'Singl	e Brake Test Up'
		− Press ESC →	[//65]
	9	Deactivate 'Test	Node'
		− Press ESC →	[20//_1]
		<ul> <li>Change to "De</li> </ul>	eactivate Test Mode" [20//_0]
		– Press 'OK' →	[20//]
		<ul> <li>Press ESC</li> </ul>	
		The elevator perfo	rms a synchronization trip
	10	Perform 2 <sup>nd</sup> 'Sing	Je Brake Test Up'
		<ul> <li>Repeat this pr</li> <li>MGB1" conner</li> </ul>	ocedure for the second brake module with the <b>"TEST-</b> ctor
Dynamic Full Brake Test Down (Test 14)			
Expected Test Result	In this t conditic	est, the brake stops ns.	the loaded car in the downward direction under emergency
Required Test			405.1% 0.0
Conditions	Car loa	ad	125 % GQ
	Travel	speed	100 % VKN
	Car tra	vel direction	Down

	Step	Procedure
	1	Active 'Test Mode'
		– Press 'OK' → [10/ / 0]
		– Select 'Test mode' [20/ / ]
		– Press 'OK' → [20/ / 0]
		- Activate <b>'Test mode'</b> $\rightarrow$ [20/ / 1]
		– Press 'OK' → [20/_/_1]
		The car travels to the control cabinet floor and opens the door. The door remains open $\Rightarrow$ [_/_/]
	2	Load car with 125 % GQ
		Load the car with the test load (125 % rated load)
	3	Select 'Full Brake Test Down'
		– Select "Start 'Full Brake Test Down" [ / /14]
		– Press 'OK' → [14/_/_]
		The door closes
		The door remains closed
		"lest ready to run" → [14/_/_2]
	4	Start 'Full Brake Test Down'
		– Press 'OK'
		<ul> <li>The car starts a trip to the bottom floor</li> </ul>
		– HMI display shows a blinking "14" → [14/_/_]
		<ul> <li>The car reaches rated speed</li> </ul>
		– HMI display shows a blinking "14" → [14//_1]
		<ul> <li>The controller triggers an emergency stop below the KSE-D magnet.</li> </ul>
		Passed: The car has stopped above KSE-D and the HMI displays
		'Full Brake Test Down' was successful ➔ [14/_1/].
		Failed: The car has stopped below the KSE-D magnet and the HMI displays
		'Full Brake Test Down' failed $\rightarrow$ [14/_0/_5]. The elevator must be put out of service immediately until the brakes have been replaced and re-tested.
	5	Deactivate 'Full Brake Test Down'
		– Press ESC → [/_/14]
	6	Deactivate 'Test Mode'
		– Press ESC → [20//_1]
		<ul> <li>Change to "Deactivate Test Mode"[20//_0]</li> </ul>
		– Press 'OK' → [20/_/_]
		– Press ESC
		The elevator performs a synchronization trip.
Dynamic Single Brake Test Downward (Test 64)		
Expected Test Result	In this t emerge	est, a single brake stops the loaded car in the downward direction under ency conditions.

Required Test Conditions	Car loa	ad	100 % GQ
	Travel	speed	100 % VKN
	Car tra	avel direction	Down
Test Procedure	Ctar		Dresselves
	Step		Procedure
	U	(Brake Test Co elevator. Make sure the	nust have the two test plugs <b>IEST-MGB</b> and <b>IEST-MGB</b> nnectors) in his tool box. The plugs are not delivered with the <b>load measuring device is enabled.</b>
		The 'Single Brake Test Up' must not be performed if the 'Full Brake Test	
		Up' was not pa	assed.
	Step		Procedure
	1	Active 'Test M	ode'
		<ul> <li>Press 'OK'</li> </ul>	→ [10//_0]

Select 'Test mode' [20/\_\_/\_\_]

Activate 'Test mode' → [20/ / 1]

Load the car with the test load (100 % rated load)

The car travels to the control cabinet floor and opens the door.

Select "Start 'Single Brake Test Down" [ / /64]

Plug the "TEST-MGB" connector into the "MGB-T" socket at control

Monitor LUET after plugging in the MGB connector. If LUET is cleared the

car started to move unintended and the MGB connector must be removed immediately. The elevator can remain in operation AND the replacement of brake system is mandatory within next 4 weeks.

The system checks if the "TEST-MGB" connectors is inserted

HMI display shows [64/\_\_/\_3] = "Test Single Brake Down" ready to start

– Press 'OK' → [20/\_\_/\_0]

Load car with 100 % GQ

The door remains closed

2

3

4

5

\_

The door closes

Attention:

- Press 'OK'

Press 'OK' → [20/\_/\_1]

Select 'Single Brake Test Down'

Press 'OK' → [64/\_/\_1]

"Test ready to run" → [64/\_/\_2] Prepare 'Single Brake Test Down'

HMI display shows [64/\_\_/\_2]

cabinet (on the SNGL or SEM3x PCB)

The door remains open  $\rightarrow$  [ / /--]

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Step	Procedure
6	Start 'Single Brake Test Down'
	– Press ' <b>OK</b> '
	<ul> <li>The car starts a trip to the bottom floor</li> </ul>
	– HMI display shows a blinking "64"  → [64//_]
	<ul> <li>The car reaches rated speed</li> </ul>
	– HMI display shows a blinking "64" → [64//_1]
	<ul> <li>The controller triggers an emergency stop below the KSE-D magnet</li> </ul>
	<ul> <li>HMI display shows [65//_4]</li> </ul>
7	<ul> <li>Unplug the "TEST-MGB" connector from the "MGB-T" socket at control cabinet (on the SNGL or SEM3x PCB)</li> </ul>
	<ul> <li>HMI display shows [64//_4]</li> </ul>
8	Acceptance Criteria
	– Press ' <b>OK</b> '
	Passed: The car has stopped above KSE-D and the HMI displays
	'Dynamic Single Brake Test Down' was successful ➔[64/_1/].
	Failed: The car has stopped above the KSE-D magnet and the HMI displays
	'Dynamic Single Brake Test Down' failed $\rightarrow$ [64/_0/_5]. The elevator can remain in operation AND the replacement of brake system within next weeks.
9	Deactivate 'Single Brake Test Down'
	– Press ESC → [//64]
10	Deactivate 'Test Mode'
	– Press ESC → [20/_/_1]
	<ul> <li>Change to "Deactivate Test Mode"[20//_0]</li> </ul>
	– Press 'OK' → [20//_]
	– Press ESC
	The elevator performs a synchronization trip
11	Perform 2 <sup>nd</sup> 'Single Brake Test Down'
	<ul> <li>Repeat this procedure for the second brake module with the "TEST- MGB1" connector</li> </ul>
12	Unload the car
Step	Procedure
1	Remove labels "Out of service"
2	Perform a test ride over the whole travel distance

Post Requisites

	4.11	Mechanical Hoistway Components
	4.11.1	STM
Component Title	<b>4.11.1.1</b> Traction	Overview Information media
Туре	STM	
Overview		310_000152

Task List

## 4.11.1.2 Maintenance Task List

Interval	Description
	Description
12 M	Visual check of the STM
12 M	Check and adjustment of the STM tension
12 M	Check of the STM elongation
12 M	Check of the STM adherence
3.0 million trips or 15 years	Replacement of all STM <sup>1)</sup>

STM [12013; ]

1) In case a Schindler's telemonitoring device featuring trip counting is not connected, an alternative mean for trip counting (electromechanical or similar) has to be implemented by the maintenance organization.

Key of abbreviations: M = month

## 4.11.1.3 Maintenance Checks

A WARNING	Worn and/or Defective Safety Components		
	Worn and/or defective safety components could have a negative effect on the operational safety, leading to damage, serious injury or death.		
	Worn and/or defective safety components must be replaced.		

Visual Check	Step	Procedure					
	1	From the car roof, the elevator is moved in inspection over the full travel lenduring which the suspension traction media are examined for damage and correctness.					
	2	2 Check that the suspension traction media attachments both at counterweight suspension point and at the car suspension point and secure.					
	3	Check that the suspension traction media are clean and If necessary, clean the STM with a dry or damp cloth. O STM cleaning. Do not use white spirit or acetone.	l, in particular, not oily. nly use clean water for				
	4	Check that the suspension traction media run correctly i the traction shaft of the machine.	n the pulley grooves of				
	5	Check that the suspension traction media:					
		<ul> <li>do not touch any part of the elevator (for example c brackets, suspension traction media retainers).</li> </ul>	ar body, guide rail				
		- are out of the range from non-related moving mecha	anical parts.				
	6	Check that the car suspension traction media retainers a necessary, the suspension traction media retainers hav	are installed correctly. If e to be repositioned.				
• •••							
Condition Check	Step	Procedure					
	1	1 Check for visible damages according to the following table and example pictures.					
		If any of the findings apply, all suspension traction medi	a must be replaced.				
		Type of Damage	Action				



## Type of Damage



Coat damage - STM piercing

Always replace



Coat damage - longitudinal cracks



STM corrosion / rust



Always replace

Always replace

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Worn or damaged profile

Always replace

Action



Coat damage - transversal cracks



Replace if more than five cracks per meter are found.

310\_000156\_00

		Type of Damage	Action
	Wire b	reak	Replace if more than three broken wires per 20 mm are found.
Checking for Dirt	Step	Procedure	
	1	All points with bearings, under the car, on the CW a checked for oil losses.	nd at the drive, must be
	2	Polluted pulleys and traction shafts can be cleaned w Beware the suspension traction media from being p	vith DBE® (dibasic esters). olluted with oil or grease.
	3	If necessary clean the STM with a dry or damp cloth STM cleaning. Do not use white spirit or acetone.	n. Only use clean water for
STM Tension	Step	Procedure	
	1	Check if the tension of all STMs is approximately equation to the STM tension can be measured by pressing a har STM.	ual. and or thumb onto the
	2	<ul> <li>If necessary, adjust the STM tension:</li> <li>Schindler 3100/3300/6300: at the car suspension out the hex nut and counter nut on the STM contexpective.</li> </ul>	on point by screwing in or nection assembly.
	3	After adjustment, travel five meters down the hoistw tension again.	ay and check the STM
	4	Repeat this procedure until the tension of all STM is	approximately equal.
STM Elongation	Step	Procedure	
	1	Position the car at the top floor.	
	2	Activate the pit stop switch JHSG.	
	3	Check the distance A between the counterweight ar 80 mm.	nd the buffer to be 40–
	4	Remove one or two distance blocks if the distance A Deposit the removed distance block(s) in the hoistw	A is less than 40 mm. ay (for future re-use).
	5	Check that the distance A is now 40–80 mm.	



STM Slip

If the distance A is still smaller than 40 mm after the removal of two distance blocks, the STMs must be shortened so that:

- the distance A is close to 80 mm but no more
- there are two distance blocks in place.

Prior to shortening the STMs, make sure that they are in good condition, otherwise replace them instead of shortening.



STM Elongation [13713; 14.06.2005]

Procedure Step 1 Move the car up with the inspection control unit it is stopped by KSE-U. 2 With a permanent pen, apply a mark onto each STM and the traction shaft. 3 Move the car down about five meters and up again to the previous position. 4 Check how much the marks on the STMs deviate from the mark on the traction shaft. If the deviation is smaller than 30 mm (KZU 2:1) respectively 15 mm (KZU 1:1), no action required. If the deviation is greater than 30 mm (KZU 2:1) respectively 15 mm (KZU 1:1), check the STM for dirt and oil and, after cleaning, with a dry cloth. Then repeat the test. Contact the second level field support if the second test also is not satisfactory. 5 Call the car from the top landing. 6 Check the stopping accuracy to be within  $\pm$  10 mm. 7 If the stopping accuracy is greater than 10 mm, check the STM for dirt and oil and, after cleaning, with a cloth. Then carry out the test once more. 8 Move the empty car with the inspection control and stop it in the upper part of the hoistway. 9 Check that the stopping distance has not been extended by an STM slip.

## STM Adheren

<ol> <li>When the car door is open, switch the recall control to ON.</li> <li>Attach a piece of paper to the door jamb just above the door sill. The paper has to be visible from the floor when the car door is closed.</li> <li>Move the car upwards with the recall control and, when the counterweig comes to rest on the buffer(s), keep going (do not release the UP buttor the STM starts slipping on the traction shaft.</li> </ol>	ht ı) until ıper at <b>PH +</b>
<ul> <li>Attach a piece of paper to the door jamb just above the door sill. The paper has to be visible from the floor when the car door is closed.</li> <li>Move the car upwards with the recall control and, when the counterweig comes to rest on the buffer(s), keep going (do not release the UP button the STM starts slipping on the traction shaft.</li> </ul>	ht ۱) until ۱)per at <b>PH +</b>
3 Move the car upwards with the recall control and, when the counterweig comes to rest on the buffer(s), keep going (do not release the UP button the STM starts slipping on the traction shaft.	ht ו) until ואper at <b>PH +</b>
	aper at <b>PH +</b>
<ul> <li>Check the moving distance (excess travel) of the car by means of the pathe door jamb. The moving distance (excess travel) must be ≤ HGP + H</li> <li>10 mm according to the layout drawing.</li> </ul>	
Stopping Accuracy Step Procedure	
1 Call the empty car to the top floor.	
2 Check the stopping accuracy.	
If the stopping accuracy is below $\pm$ 10 mm, no measures have to be tak	en.
If not, the STM must be checked for dirt and must be cleaned.	
<b>3</b> Repeat the stopping accuracy test.	
Emergency Stop Procedure	
<ol> <li>Move the empty car upward in inspection mode and stop before you reation top floor. The STM should not slip.</li> </ol>	ch the

STM Monitoring Device	In case that the maintenance is performed by a company other than Schindler, this maintenance company has two possibilities to handle the STM monitoring:		
	– eith to r	er procure the STM-MD from Schindler and perform STM monitoring according elevant instructions or	
	<ul> <li>rep</li> <li>trip:</li> </ul>	ace all STM at the specified intervals: 3 000 000 trips or 15 years (if 3 000 000 s has not been reached).	
	If the monitoring frequency is not respected or if the monitoring is not done at all, then the STM must be replaced upon reaching the indicated number of trips.		
Check of Slack STM Detection	Step	Procedure	
	1	This step applies to Schindler 3100/3300/6300 only. Check:	
		<ul> <li>That the mounting bracket (1) is in the fully upright position.</li> </ul>	
		<ul> <li>That the gaps between the swing lever (3) and the bushes (4) are equal.</li> </ul>	
		<ul> <li>That the slack STM switch is actuated when the movement of the swing lever (3) reaches the line of deflection (2) as shown below.</li> </ul>	

When the slack STM switch is actuated, the safety circuit must open and the car must not move by Inspection Control (REC) commands.



- 3 Swing lever (of actuator assembly)
- 4 Bush

## 4.11.2 Buffers P+S

## 4.11.2.1 Overview

<b>WARNING</b>	<b>Contamination of Elastomer Buffers</b> The performance of buffers made from Diepocell BM deteriorates if contaminated with aqueous liquids, which in the event of a buffer travel may result in damage to the installation or injury to elevator passengers.
	Replace buffers made from Diepocell BM if,
	<ul> <li>The buffers are contaminated with aqueous liquids, for example after flooding of the pit with water.</li> </ul>
	<ul> <li>A scratch test shows that the buffer material is brittle.</li> <li>The buffer bonding to the baseplate is weakened.</li> </ul>

## 4.11.2.2 Maintenance Task List

#### Interval Description [Months] General check of buffers 1) 12 12 Visual check 12 Decomposition check by scratch test -Buffer replacement due to: Contamination Deterioration \_ Weak bonding between the buffer and the baseplate. \_

1) This task must be completed after a buffer impact.

### 4.11.2.3 Maintenance Checks

General Check on the installation

Task List

# Step Procedure

Check the buffer and its horizontal support (if available) for any damage.
 Check the buffer stands vertically in the hoistway.
 Check the bolts are fastened and retightened if necessary.
 Check the buffer bonding to the baseplate is intact.

Visual Check on the Buffer Material

Step	Procedure
1	Check the buffer for any visible contamination or deterioration due to contact with liquids such as detergent, water, oil, etc. If required, replace the buffer(s) in chapter "Replacement".

	4.11.3	Buffer OLEO
	4.11.3.1	Overview Information
Component Title	Oil buffe	۶r
Туре	OLEO L	.SB 16.B
Operating Principle of Buffers	The ope	rating principle of the buffer is as follows:
	No	Step
	1	The buffer head is impacted, forcing the plunger to move along inside the cylinder.
	2	The oil in the oil chamber is forced through the port holes in the metering tube. These ports have different sizes and positions. These are arranged to give different characteristics to each buffer.
	3	The resulting plunger motion causes the piston to compress gas in the gas chamber.
	4	When the load is removed, the gas then expands thus returning the plunger to its original position.

An electric control switch is used to signal the plunger position. The switch is operated as soon as the plunger is actuated. The switch returns to its original state once the plunger has returned to its original position.



[49423; 05.12.2013]

- 1 Oil reservoir
- 2
- Metering tube Dipstick (Oil filling point) 3
- 4 Plunger
- 5 Gas chamber
- 6 Rubber block
- 7 Control switch

Application Range	Application	Abbreviation	Range LSB 16.B		
	Buffer Stroke	HPH [mm]	173.7		
	Maximum Admissible Speed ofVPAZ [m/s]1.84Impact on Buffers				
	Maximum Admissible Rated S	peed VKNZ [m/s]	1.60		
	Slowdown Monitoring Device - Without				
	Minimum Admissible Mass for Buffer	One GPZ1 [kg]	450		
	Maximum Admissible Mass for One Buffer	GPZ2 [kg]	3250		
	Weight of the Buffer (Without 0	Dil) GP [kg]	6.7		
	Oil Quantity	- [l]	0.9		
Verification	Each OLEO LB buffer is deliver Each buffer order also includes The electrical set contains the p switch fixing parts. The bistable already set. The mechanical set contains fo	red packed in its own collapsib one electrical and one mecha re-assembled switch-cable-co safety switch, which is of the ur anchor bolts with nuts and v	le cardboard box. nical set. nnector unit complete with manual reset type, is washers.		
Connections	The electrical safety switch sup safety circuit.	ervising the buffer has to be ir	tegrated correctly into the		
Adjustment	The safety component is adjust allowed unless defined in this d	ed by the manufacturer. Furth ocument.	er adjustment work is not		
Safety Examinations	If national legislation requires p and functional checks must be	eriodic tests, instructions giver obeyed.	n for the acceptance test		
Test Specifications	Item	Test			
		Car Buffer ( (Full Load)	Counterweight Buffer (Empty Car)		
	Car Load GQ [%]	100	0		
	Travel Speed VPAZ [%]	100	100		
	Car Travel Direction	Down	Up		
		Specifications for Buffer Tests			
Oil	Use HLP 68/ISO 6743/4 L-HM6 with additives for improvement performance under boundary lu	8, in accordance with DIN 515 of anti-corrosion properties, ar brication conditions (anti-seize	24. These are mineral oils nti-aging and improved additives).		

## 4.11.3.2 Maintenance Task List

This instruction does not contain national norms, regulations and contractual stipulations.

### Task List

Interval 1)	Description
12 M	General check <sup>1)</sup>
12 M	Clean <sup>1)</sup>
12 M	Check the oil level <sup>1)</sup>
12 M	Check the height of the buffers <sup>1)</sup>
12 M	Check the safety switch <sup>1)</sup>

1) These tasks must be completed after a buffer impact.

Key of abbreviations: M = month

## 4.11.3.3 Maintenance Check

This instruction does not contain national norms, regulations and contractual stipulations.

Conorol Chook		
General Check	No	Step
	1	Check the buffer and its horizontal support (if available) for any damage.
Cleaning		
	No	Step
	1	Clean the buffer casing.
	2	Clean the plunger and oil lightly.
Check the Oil Level	No	Step
	1	Check the oil level with the indicator. The minimum (B) and maximum (A) oil levels allowed are marked on the indicator.
Check the Height of the Buffers	No	Step
	1	Check the HP dimension when the buffer is fully extended.
Check the Safety Switch	No	Step
	1	Check that the safety switch operates smoothly and works correctly.
	4.11.3.4	Replacement
	Worn ar only.	nd / or defective safety components must be replaced by original spare parts
	4.11.4	SA GBP 201
	4.11.4.1	Overview
Туре	SA GBF	° 201

#### Description

The SA GBP 201 overspeed governor detects overspeed electrically in both directions upwards and downwards. It engages mechanically only in the down direction and operates on the pendulum/cam principle.

#### Overview



Friction Roller Replacement SA GBP 201 [38601; 25.03.2011]

Safety switch KBV/KBVG 1 Precontact plate 2

4.11.4.2 Maintenance Task List

Pendulum

Mounting bolts

3

- Type label 6
  - 7 "Direction of Rotation" sticker
  - 8 Retaining spring Complete friction roller (with O-ring)
- Electrical remote control ERC (optional) 9 4 5
  - 10 Retaining ring

## Task List

Interval <sup>1)</sup>	Description
12 M	General check of overspeed governor
12 M	Check safety switch (KBV/KBVG)
12 M	Check the tension device
12 M	Check safety switch (KSSBV/KSSBVG)
12 M	Check rope coupling
12 M	Check governor rope
60 M	Test of rope friction force FC and engagement of safety gear
60 M	Test tripping speed

1) Minimum frequency

Key of abbreviations: M = month

## 4.11.4.3 Maintenance Checks

MARNING	Worn a Worn a operati Worn a	and/or Defective Safety Components and/or defective safety components could have a negative effect on the onal safety, leading to damage, serious injury or death. and/or defective safety components must be replaced.
Overspeed Governor Checks	Step	Procedure
	1	The safety component does not need any lubrication.
	2	The overspeed governor rope should not be lubricated.
	3	Remove the safety cover if it is installed.
	4	Check that the mounting bolts are tight.
	5	Check that the safety switch fastening is tight.
	6	Check that the pendulum moves easily.
	7	<ul> <li>On each pendulum check:</li> <li>That the pendulum roller is in good condition.</li> <li>That the O-ring of the pendulum roller is free of cracks. Replace the complete friction roller.</li> <li>Check wear of the bearing by measuring dimension A &gt; 1 mm. If A ≤ 1 mm, replace the complete overspeed governor.</li> </ul>



Overspeed Governor [17962; 26.06.2009]

#### Safety Switch Checks

Step

#### Procedure

- 8 Electrical check of safety switch KBV (2)
  - Input car call at controller cabinet.

Caution: Contacts will be bridged with the "Recall control".

- Turn the contact plate (1) until the safety switch (2) trips.
  - Car stops: Safety switch OK
  - Car does not stop: Find and correct error in safety switch or peripheral equipment. Repeat test.
- Return contact plate (1) to stand-by position, reset safety switch.



Safety Switch Check SA GBP 201 [38602; 25.02.2011]

- 1 Contact plate
- 2 Safety switch

Tension Device Checks



## A DANGER

#### **Crushing Hazard in the Hoistway Pit**

one option.

Entering the hoistway pit exposes a person to the hazard of getting crushed by the moving car or counterweight, which will result in serious injury or death.

As a precaution, always check the proper functioning of the pit stop switch before entering the hoistway pit.

#### **Tension Device and** Slack Ro

Tension Device and	Step	Procedure
Slack Rope Switch		
	1	Clean the tension device if required.
	2	Check fastening of weight blocks (2).
	3	To ensure correct slack rope switching, make sure the tension device did not slide down the rail from the initial position.
	4	Check elongation of governor rope: The tension arm should not be lower than in horizontal position. Shorten the rope if necessary.
	5	Check slack rope switch (KSSBV, KSSBVG)
		<ul> <li>Activate the slack rope switch manually.</li> </ul>
		Caution: Slack rope contacts will not be bridged with the "Recall control"
		<ul> <li>Exit hoistway, switch on hoistway pit switch and close the landing doors.</li> </ul>
		<ul> <li>Input floor call</li> </ul>
		<ul> <li>Car does not travel: Slack rope switch OK</li> </ul>
		<ul> <li>Car travels: Find and correct malfunction in slack rope switch or peripheral equipment. Repeat test.</li> </ul>
		<ul> <li>Return the weight block and slack rope switch to operating position.</li> </ul>
Rope Coupling	Step	Procedure
Check		
	6	Check the general condition of the rope coupling, the rope clips and the spring wire.
	7	Check that the governor lever (4) is securely attached to the governor rope coupling assembly.
	8	Check that the washers (1), clevis pins (3), cotter pins (2) and spring wire (5) are in place.
		Note: There are different types of rope couplings. The type with spring wire is

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## 4.11.4.4 Periodic Tests

## With Weight Block of Tension Device



Friction force FC must be checked also following the replacement of the governor rope.

Step	Procedure
1	Make sure the car is empty.
2	Position the car/counterweight approximately 1 m above lowest stop and switch to inspection travel.

**3** Remove one weight block from tension device (approximately 1/2 FCU) and tighten one weight block with the screw and nut again.



FC Test with FCU/2 [17966; 23.04.2012]

Step	Procedure
4	Move the car/counterweight downwards (approximately 10 cm) at reduced speed (for example with recall control). Block the governor pulley by engaging the pendulum (with ERC or manually) and allow the car to travel an additional 10 cm.
	<ul> <li>Safety gear jaws close clearance to guide rails and the car/counterweight comes to a stop: Test successful.</li> </ul>
5	Move the car/counterweight upwards until the overspeed governor and safety gear have disengaged.
6	Reset safety switches on overspeed governor and actuating mechanism.
7	Reinstall the weight block onto the tension device.
### Overview Governor Speed Verification Standard

Step	Procedure
1	Check the rated speed on the type label.
2	Position the car to access the rope coupling. Make sure the landing door is accessible without having to move the car, because after the test the car is not movable.
3	Lift the governor lever and fasten it to keep the governor lever in position. Make sure the safety gear remains engaged.
4	Release the rope coupling from the overspeed governor lever.
5	Attach an additional weight (1) above the rope coupling. Choose the weight allowing a gradual acceleration of the governor rope.
	<b>Note:</b> Start with 1 kg. If this is not sufficient, use 2 kg. If still not sufficient, use both weights (total 3 kg). Do not use other weights than the ones supplied.



Tripping Speed Check (version SA GBP 201 shown) [42108; 09.12.2011]

1 Additional weight

Step	Procedure	
6	Pull the rope coupling with the additional weight (1) some meters above: Approximately 3 m for rated speed $\leq 1.75$ m/s	
	<ul> <li>Approximately 10 m for rated speed &gt; 1.75 m/s.</li> </ul>	
7	Hold the tachometer against the rope. Place the display nearby, so that one hand is free.	
8	Release the governor rope. Allow the governor rope with the additional weight to accelerate downwards until the overspeed governor trips.	
9	Use the free hand to catch the side of the rope which moves upward.	
10	Write down the indicated value and reset the tachometer.	

Step	Procedure
11	Repeat steps 6 10 two more times and calculate the average of all three measurements.
12	Compare the average value with the allowed values on the data plate.
13	Remove the additional weight. Connect the rope coupling, release the governor lever and reset KF if necessary.
14	Reset the overspeed governor.

### 4.11.4.5 Replacement

### Friction Roller and O-Ring

Step	Procedure
1	Remove the retaining ring (1).
2	Replace the complete friction roller (2) and insert again the retaining ring (1).



Friction Roller Replacement [29976; 14.05.2009]

- 1 2
- Retaining ring Complete friction roller (with O-ring)

Step	Procedure	
1	Exchange the safety switch (2).	
2	Set the distance of 1 mm between the precontact plate (1) and the switch head (3).	
3	Tighten the switch screws (4).	
4	Check the safety switch head (3) does not touch the precontact plate (1) when the pendulum is moving.	
5	Move the precontact plate (1) to check that the safety switch (2) is actuated in both directions.	
6	Perform the tripping speed VCA test.	

### Safety Switch KE



### Safety Switch Replacement [38608; 06.07.2011]

- 1 Precontact plate
- 2 Safety switch
- 3 Switch head
- 4 Switch screws

### 4.11.4.6 Reset

When the overspeed governor has been triggered some steps should be followed.

For a non desired actuation of the overspeed governor for car/counterweight check that no persons are inside the car. If someone is inside proceed, with the rescue operation as described in the instruction manual of the installation. If there are no persons in the car:

- Move the car/counterweight upwards.
  - Manually by means of releasing the brake and moving the hand-wheel of the machine.
  - Automatically, moving it with the main power of the machine.
- Release the pendulum.
  - Raise the pendulum and disengage the pendulum nose from the pulley.
  - Check the overspeed governor pulley turns freely.
- Release the safety switch.
  - Reset the safety switch with the Electrical Remote Reset (ERR).

Reset After Activation

	4.12 Car Door
	4.12.1 Varidor 15
	4.12.1.1 Overview Information
Component Title	Car door
Туре	DO VAR 15
Description	The DDE-V15 is a small sized fully digital smart motion EC motor and door drive with integrated electronics. The DDE V15 are equipped with hall sensors, encoders and can run with different speed and acceleration in opening and closing directions. The motion is completely speed and position regulated to substitute external brakes and contacts. The DDE-V15 is specially designed for being commanded and controlled in the XSCAN/CAN open network. In addition, the unit can be operated for service reasons through the RS 232 communication port, using DDE Studio or ESM/SMLCD. The setup of the system (speed, acceleration) can be done with the built-on HMI-V15 keypad. The door drive is composed out of a ground plate which contains the rail, the carriers, the belt drive system and the electric/electronic components such as the motor, the encoder system and the control box (completely wired). Furthermore, the mechanical interface to the landing door (door lock) is carried out by means of the clutch in the landing area.

Overview



[41353545\_008; 03.07.2014]



- 6 Clutch cam
- 11 Stopper rubber



ΤοοΙ	Figure	Description
Belt Calibration Tool		This calibration tool is used to find the correct tension of the tooth belt. ID no. 59351709

**Special Tools** 

Interval [Months]	Description	
12	Check for damages	
12	Check for corrosion	
12	Clean and dry mechanics	
12	Clean rails but do not oil	
12	Clean sill of car door	
12	Check vertical parallelism of door panels	
12	Check alignment of door panels	
12	Check gaps between door panels and frames	
12	Check gaps between door panels and door sill	
12	Check if no tilt of panels	
12	Check easy and smooth running of door panels	
12	Check main rollers, counter rollers (sliders) and retaining washers	
12	Check guide shoes	

### 4.12.1.2 Maintenance Task List

### Car Door Special

Car Door Miscellaneous

Interval [Months]	Description	
12	Adjust clutch cam	
12	Check tooth belt tension	
12	Check condition of clutch or car door lock	
12	If car door lock installed: Check locking of car door lock	
12	Check contacts and contact bridges of door contacts	
12	Check contact of car door lock (if car door lock installed)	

### Door System

Interval [Months]	Description	
12	Check door performance	
12	Check complete closure of door	
12	Check function of light curtain	
12	Check function of door contacts	
12	Check correct adjustment of clutch against door lock	

### Replacement

and Dryness

Interval [Months]	Description
12	If malfunctioning or defective, check condition of door panels and replace door panels
12	If malfunctioning or defective, check condition of main rollers and replace main rollers
12	If malfunctioning or defective, check condition of counter rollers and replace counter rollers
12	If malfunctioning or defective, check condition of rubber dampers and replace rubber dampers
12	If malfunctioning or defective, check condition of guide shoes and replace guide shoes

### 4.12.1.3 Maintenance Checks

Check for Domogoe		
Check for Damages	Step	Procedure
	1	Check all parts and components visually for damages.
	2	For every design or visual damage: Report.
	3	Damage with functional influence, for example glass from glass door is broken, replace parts.

Oh a als fan Oanna alam		
Check for Corrosion	Step	Procedure
	1	Check all parts and components visually for corrosion.
	2	For every corrosion: Report.
	3	Damage with functional influence, for example glass from glass door is broken, replace parts.
Check for Cleanness	<b>O</b> tor:	Descadure

Step	Procedure
1	Check on clean and dry rail, carrier roller, counter roller, transmission roller, cable, guide shoes, sill, belt pulley and belt.
2	If necessary: clean and dry them, no oiling.

### Clean Rail

Step	Procedure
1	Clean rail (1), both upper and lower sides, do not oil it.
2	Check the complete door drive (2) is clean from debris, etc.



[41353545\_010; 03.07.2014]

1 Rail 2 Door drive

### Clean Car Door Sill

Step	Procedure
1	Clean the car door sill profiles (1) with a cloth.
	Do not use abrasive paper.
2	Chaok holog on sill are free from debrie sta

2 Check holes on sill are free from debris, etc.



[41353545\_011; 03.07.2014] 1 Car door sill profile

### **Check Guide Shoe** E2 Clearance

#### Procedure Step Push the door panel (3) slightly to the car side. 1

Check the clearance between the sill profile (1) and the guide shoe (4), using a feeler gauge (2). If the clearance is > 1 mm, replace the guide shoe (4). 2



- [34537; 10.07.2014]
- 1 Sill profile
- Feeler gauge 2
- 3 Door panel 4
- Guide shoes

**Guide Shoe E1** 



[41353545\_039; 10.07.2014]

### Check Alignment of Door Panels

Step	Procedure
1	With the door open and using a steel ruler (1), check if the car door panels (2) are aligned with the front wall or door jamb.
•	

- 2 If the door panels (2) are not aligned, loosen the M6x20 cutting screw (6) to unlock the transmission cable (5).
- **3** Realign the door panels (2) and secure the transmission cable (5) by tightening the M6x20 cutting screw (6).
- 4 Check the lock washers (3) are damaged. If necessary, replace the lock washers (3).



[41353545\_013; 03.07.2014]

- 1 Steel ruler
- 2 Door panel
- 3 Lock washer
- 4 Transmission pulley
- 5 Transmission cable
- 6 M6x20 cutting screw

### Check Gaps between Door Panels and Sill

Step

1	Check the gap between door panels and door sill (about 5 mm).	

Check "NO" Tilt of Panels

Step	Procedure
1	Move door panels manually.
2	Push both panels in the opening direction at the bottom of the panels until the panels open (as far as possible) with approximately 15 kg.
3	Check the gap. The maximum gap $X = 45$ mm for C2 and $X = 30$ mm for T2.
4	If the maximum tolerance is reached, check the door panels adjustment and the condition of the counter rollers.

Procedure



Tilt of Panels [34593; 25.11.2013] X = 30 mm for T2 45 mm for C2 / C4

Check Easy and Smooth Running of	Step	Procedure
Door	1	Move door panels manually.
	2	Check no
		scratching occurs on the door frame or car door in front. If there is scratching, adjust panel or door frame.
	3	Check smooth running of the guide shoes in the sill. If squeezing:
		<ul> <li>Remove the guide shoes and check the horizontal bending of the door panel.</li> </ul>
		<ul> <li>Exchange the guide shoe.</li> </ul>
	4	Check the main rollers run smoothly - no rattling, with even moving resistance.
		If rattling or uneven movement, do the following:
		<ul> <li>Light rattling: Check condition of main roller. May be acceptable and will disappear while moving door more often.</li> </ul>
		<ul> <li>Heavy rattling: Check / exchange the main roller.</li> </ul>
		<ul> <li>Uneven movement: Check adjustment of counter roller.</li> <li>Check / exchange the main roller.</li> </ul>

### Check Lock Engagement on First Contact

Step	Procedure
1	Press the carriers into the closed stopper rubber.
2	Move the KTC contact bridge (1) into the housing (2) until a first contact is established.
3	Check the CDL engagement is $\geq$ 7 mm.



[41353545\_025; 03.07.2014]

- Contact bridge Contact housing 1 2

Adjustment of Door Lock



Door Lock [45310310\_002; 04.05.2015]

- 1 Clutch
- 2 Opening direction

Landing Door Type	Clutch Closed Z [mm]	Adjustment Gap X [mm]	Inner Roller Distance (Lock Closed) Y [mm]	Z (+CDL)
WIA	39	22 (T2), 17 (C2)	80 (T2), 75 (C2)	47
FEC	39	12	70	47

Door Performance	Step	Procedure
	1	Run door system in normal or HMI operation mode.
	2	Check overall door performance:
		<ul> <li>Ride quality.</li> </ul>
		<ul> <li>No rattling, scratching, etc.</li> </ul>
		<ul> <li>No door stopping during locking / unlocking.</li> </ul>
		<ul> <li>No noise during closing of hoistway or car door lock.</li> </ul>
	3	Check guide shoe noise, if there is considerable noise, adjust or replace components.
Complete Closure of	Step	Procedure
Door	1	Run door system in normal mode.

ling	Step	Procedure
_	1	Run door system in normal mode.
	2	<ul> <li>Check complete closure of landing and car door.</li> <li>No visible gaps between door panels.</li> <li>No light from hoistway visible, if doors are closed.</li> </ul>
	2	If necessary adjust door papels and carrier stop
	5	in necessary, adjust door panels and camer stop.

Function of Light	Step				Procedure	
Curtain	1	Run door sys	stem in norr	nal mode	e, not firefighter mode.	
	2	, Bring in an o	bstacle whil	e doors	are closing (for example, o	operator's hand).
		<ul> <li>Check im</li> </ul>	nmediate do	or stop a	and reversal (reopening).	. ,
		<ul> <li>Door has</li> </ul>	to stay ope	en as lon	g as obstacle is present.	
	3	If necessary,	check light	curtain e	electronics and connectior	n to elevator control.
Function of Door	Step				Procedure	
Contacts	1	Check conta	ct bridge fit	centred	into the housing holes.	
	2	Check the di	stance of th	e contac	t bridge to the housing is	4 mm.
	3	Adjust until c	orrect conta	acting.		
Correct Adjustment of Clutch against	Step				Procedure	
Door Lock	1	Check correct indicated.	ct adjustme	nt of clute	ch/car door lock and landi	ng door lock as
	1 LE 2 LE 3 LE 4 LE 5 LE 6 LE <b>Diagno</b>	5 B B C D G C C C C C C C C C C C C C	NSP SETU OFF Auto > / OFF Auto > // MI Keypad ( ady" ked / Open cle" psed (KET-4 P" // UP"	6 IP 5 5 9 10 Maxon SI ed" S2)"	Image: second	7 COM         
	1	2	3	4	Description	Fault Rectification
		All flashing			Door error	Check error log in SMLCD
	Blinkin slowly	g -	-	-	Door is in standby state	-
	-	Blinking slowly	-	-	Referencing not executed	Close door until locked
	-	-	Blinking slowly	-	KSKB / KOKB / RPHT / KTL / KTFP active	Remove obstacle
	Flashir	ng -	-	-	Torque off	-

5	6	7	Description	Fault Rectification
Blinking slowly	-	-	INSP by EC	-
-	Flashing	-	AutoSetup error	-
-	-	OFF	No CAN communication	Check wiring and EC state
-	-	Blinking slowly	Comm. OK EC not ready	Physical connection is okay $\rightarrow$ Check EC
-	-	Blinking fast	Communication error during SW download via CAN interface	Check wiring and restart download
-	-	Single Flash	SW download in preparation (bootloader mode)	-
-	-	Triple Flash	SW download in progress (bootloader mode)	-

### AutoSetup

Step	Procedure
1	Check JREC is ON (Inspection Car) and switch power ON (JHT / optional JHCT).
2	Enable inspection door by pressing the INSP key, car door must be in door zone.
3	On the inspection control station, press the DRET-U/(D) until the blue LUET LED on the SALSIS main sensor indicates that the car is in the door zone.
4	<ul> <li>On the HMI, press the Setup key for &gt; 5s to start AutoSetup.</li> <li>→ LED 'SETUP' is blinking slowly, that is, AutoSetup is in progress</li> <li>→ The door opens a small distance</li> <li>→ The door locks</li> <li>→ The door opens, closes 1st time with reference speed</li> <li>→ The door opens, closes 2nd time with reduced normal speed</li> <li>→ The door opens, closes 3rd time with final normal speed</li> <li>→ LED 'SETUP' is OFF, that is, AutoSetup has successfully finished</li> <li>If AutoSetup failed due to any reason:</li> <li>→ LED '1 4' and 'Setup' are blinking fast</li> <li>On the HMI, press the Setup key to clear error.</li> </ul>

### AutoSetup Diagnostics

The following table lists the errors that cause an AutoSetup failure. The errors are indicated by binary color codes.

No	Description		LED			
		8	4	2	1	
1	General error during motion trip	0	0	0	•	
2	Door has stopped due to externally triggered command	0	0	•	0	
3	Door has stopped due to the activation of a safety device	0	0	•	•	
4	Timeout occurred, for example in case of AutoSetup failure	0	0	0	0	

	No	Description		LE	ED	
			8	4	2	1
	5	Error 837 Lock Pos Failure according to error handling specs	0	0	0	•
	6	Error 832 KET-S2-Failure according to error handling specs	0	0	•	0
	7	Data collection closing direction failed	0	0	•	•
	8	Current control parameters too low (< 0)	ightarrow	0	0	0
	9	Position control parameters too low (< 0)	ightarrow	0	0	•
	10	Open position too small (< 300 mm + closed position) or KET-S2 position too small	ightarrow	0	•	0
	11	Motor polarity detection changed the polarity more than once	ightarrow	0	•	•
	12	Door mass too low (< 10 kg)	ightarrow	0	0	0
	13	Door closing spring constant out of range < -30 N/m or >200 N/m	•	0	0	•
	13	Not allowed landing door configuration due to too high closing spring constant (> 15 N/m) with door mass > 120 kg	•	0	•	0
Diagnosis via ErrorLog (SMLCD)	The Va <b>Error</b> The do forwar	aridor 15 error range is 800 899. <b>Log (SMLCD)</b> por controller indicates a door error via SMLCD. The door erro ded to the lift error log.	rs ar	e dire	ectly	
Setting Closing	Step	Procedure				
	1	Check the closing force with elevator in normal operation. T must be checked in the rate speed range and if it does not e setting is required.	he cl excee	osing ed 15	i force 0 N, i	e no

2 If closing force is > 150 N, repeat AutoSetup.

## Sematic 2000 C-MOD 4.12.2 4.12.2.1 Overview Information **Component Title** Car door Туре Sematic Description Sematic car door Overview 6 7 2、 1 Sematic Car Door (T3 version shown) [43350; 01.05.2012] Sill 5 Belt 1 Door panel Carrier rollers Header 6 Clutch / car door lock / emergency release mechanism 7 Closing edge

### 4.12.2.2 Maintenance Task List

Task List

Interval	Description
6 M	Clean the sill.
6 M	Check the guide shoes play.
500 F	Clean the header and belt unit.
500 F	Check the door panels:
	<ul> <li>Opening/closing position</li> </ul>
	<ul> <li>Vertical alignment.</li> </ul>
500 F	Check the easy and smooth running of the door and gap between the panels and the car door front.
500 F	Check the wearing of the carrier roller and that they run smoothly.
500 F	Check that the clutch and car door lock open/close completely and that the car door lock engagement is minimum 7 mm when closed.
500 F	Check the car door lock locking (if a car door lock is installed).
each inspection	Check the contacts and contact bridges of the door contacts and the car door lock contact (if a car door lock is installed).
each inspection	Check the emergency release mechanism (if an emergency rope is installed).
each inspection	Check the belt tension.
if needed	Check the condition of the guide shoe.
if needed	Check the bearings of the carrier rollers.
if needed	Check the clutch/door lock clearance (closed position) and penetration (not closed position).
if needed	Check the complete closure of the car and landing door.
if needed	Check the function of the light curtain.
if needed	Check that the closing edge gap of the door panels is maximum 6 mm.

Key of abbreviations:

– M = month

F = Thousands of cycles

	4.12.3 Wittur Fine Line
	4.12.3.1 Overview Information
Component Title	Car door
Description	Car door
Overview	

2、

6

7

3

U

Coupler Safety edge Guiding shoes Belt

[43402603\_014; 28.07.2017]

5

6 7

8

Mechanism Door panel Landing sill Main/counter roller

1

2 3 4

### 4.12.3.2 Maintenance Task List

Car Door Miscellaneous

Interval	Pos. No	Description
12 M	-	Check for damages
12 M	-	Check for corrosion
12 M	1	Clean and dry mechanism
12 M	1	Clean main tracks, no oiling
12 M	3	Clean landing sills
12 M	3	Check sill gap
12 M	2	Check vertical parallelism of door panels
12 M	2	Check alignment of door panels
12 M	2	Check gaps between door panels and cabin front
12 M	2	Check gaps between door panels and door sill
12 M	2	Check easy and smooth running of door panels
12 M	4	Check main rollers, counter rollers and ring
12 M	7	Check guiding shoes
12 M	8	Check the tension of belt driven
12 M	5	Check the coupler
12 M	6	Check safety edge
12 M	8	Check condition of belt driven
12 M	1	Check condition of the synchro rope
12 M	1	Check emergency drive

### Car Door Lock

Interval	Pos. No	Description
12 M	6	Check of penetration of hook lock and lock engage
12 M	6	Condition of contact bridge
12 M	6	Condition of safety contacts
12 M	3, 7	Check the unlocking device activity
12 M	7	Check the car door lock interface
12 M	6	Check condition of the car door lock

Key of abbreviations:

– M = month

Replacement to be done based on the condition.

	4.12.4 FEP
	4.12.4.1 Overview Information
Component Title	Car door
Туре	FEP
Description	FEP car door system
Overview	1       1         2       1         3       1         4       1         4       1         5       1         6       1         6       1         7       1         6       1         7       1         6       1         7       1         8       1         9       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1         10       1

5 Synchronization cable6 Synchronization pulley

### 4.12.4.2 Maintenance Task List

Task List

Interval	Description
6 M	Clean the sill.
12 M	Check and clean the KTC switch.
12 M	Closing cycle of the car, check if the door stops at the closing bumper when closed.
12 M	Check the alignment of the door panels.
12 M	Clean the guiding rails.
12 M	Visually check the guiding rollers.
12 M	Check the tension of the belt.
12 M	Check and clean the motor pulley.
12 M	Visually check the synchronization cable.
12 M	Visually check the synchronization pulley.
12 M	Grease the clutch pin and check the axles play.
12 M	Check the function of the light barrier if installed.
500 F	For C2 car door, visually check the teeth on the belt. Replace if necessary.

Key of abbreviations:

- M = month
- F = Thousands of cycles

### 4.12.4.3 Maintenance Checks

### **KTC Switch**

Step	Procedure
1	Open and close the car door by using the VF5+/VF7 for DO FEP control.
2	The KTC bridge (2) must correctly fit into the KTC switch (1).
3	If the KTC bridge (2) does not fit correctly, loosen the two nuts (4) and move the KTC switch (1) to the correct position.
4	Check the function of the KTC switch (1). The KTC bridge (2) must penetrate at least 2 mm (for DO FEP) into the KTC switch (1).
5	If the gap of 2 mm (for DO FEP) is not reached, loosen the fastening bolts (3) and move the KTC switch (1) to the correct position.
6	If necessary, clean the contacts of the KTC bridge (2) using a lint free cloth.



Function Check of the KTC Switch for T2-EU and C2-EU/AP [14123; 09.07.2013]

1	KTC switch	3	Fastening bolt
2	KTC bridge	4	Nut



1 KTC switch 2 KTC bridge

Step	Procedure
1	Close and open the car door by pressing the test button on the VF5+/VF7 (for DO FEP) control (1) on the rear of the door drive and check the distance between the door carrier (2) and the guiding rail is: - For DO FEP: 25 mm.
2	If necessary, use the set screw (3) to adjust the gap.
3	Check the rubber buffer (7) and closing bumper (4) and replace them if they have sign of cracks.



Noise Check for DO FEP T2-EU/NA (T2-EU shown) [43402603\_010; 17.03.2016]

- 1 VF5+/VF7 control
- 2 Door carrier

### **Door Closing C2**

Step	Procedure
1	Close and open the car door by pressing the test button on the control (1) on the rear of the door drive and check that there is a distance of 30 mm between both door carriers (4).
2	If necessary, use the set screw (3) to adjust the gap.
•	

**3** Check the rubber buffer and closing bumper (5) and replace them if they have sign of cracks.



Noise Check for C2-EU/NA (DO FEP C2-EU shown) [41141759\_010; 26.03.2015]

- 1 Door drive 4 Door carrier
- 2 VF5+/VF7 control 5 Closing bumper
- 3 Set screw

### **Door Panel** Alignment T2

Step	Procedure
1	Door opened, check the fast door panel (8) is aligned to the jamb (6).
2	If the fast door panel (8) is not aligned with the jamb (6), adjust it using the set screw (1).
3	Door opened, check the slow door panel (7) is aligned to the jamb (6).
4	If the slow door panel (7) is not aligned with the jamb (6), adjust it by loosening the M6 x 16 bolt (4) to slacken the synchronization cable (5).



Synchronization Check for T2-EU/NA [42121; 13.12.2011]

- Set screw 1
- 2 Closing bumper
- 3 Clamp
- M6 x 16 bolt 4
- 5 Synchronization cable
- 6 Jamb
- 7
- Slow door panel Fast door panel 8
- Alignment tool (spirit level or other) 9

### Door Panel Alignment C2

Step	Procedure
1	Door opened, check that both door panels (1) are aligned (BKE + 15 mm)

2 If the door panels (1) are not aligned, adjust them by using the set screw (3) and by loosening the M6 x 16 bolt (7) to slacken the synchronization cable (5).



# Guiding Rails and Rollers

Step	Procedure
1	Check both guiding rails (2).
2	Clean both guiding rails (2) if they are dirty, using a lint free cloth.
3	Check the guiding rollers (1) for any damage.

4 Clean the guiding rollers (1) if they are dirty, using a lint free cloth.



### **Belt and Motor** Pulley T2

Step	Procedure
1	Open the car door.
2	Put the belt tension tool (1) on the belt (3) in position, see the table below. The measure "X" must be taken between the belt tension tool (1) and the motor pulley (4).
3	Check the belt tension and adjust it if necessary by moving the pulley (6). The belt tension is correctly adjusted when the belt (3) is positioned in the area (2) defined by the pulley (6).



Belt Tension Check and Adjustment for T2-EU/NA [16213; 13.07.2011]

Belt tension tool 1 2 3

Motor pulley

Belt

4

- Clutch 5
- 6 7 Area tension is correctly adjusted
- Pulley Nut to fasten the pulley

### **Dimension X**

Type and BKE [mm] Skate Position		Panels Positions [mm]
Opened	Opened	298
Opened	Opened	293
Opened	Opened	273
Opened	Opened	288
Opened	Opened	258
	Opened Opened Opened Opened Opened	OpenedOpenedOpenedOpenedOpenedOpenedOpenedOpenedOpenedOpened

### **Belt and Motor** Pulley C2

**Dimension X** 

Step	Procedure
1	Close the car door.
2	Visually check the condition of the teeth on the belt. Replace the belt (3) if necessary.
3	Put the belt tension tool (1) on the belt (3) in position, see the table below. The measure "X" must be taken between the belt tension tool (1) and the pulley (4).
4	Check the belt tension and adjust it if necessary by moving the pulley (4). The belt tension is correctly adjusted when the belt (3) is positioned in the area (2) defined by the pulley (4).



Belt Tension Check and Adjustment for C2-EU/NA [29236; 13.07.2011]

- Belt tension tool 1
- Area tension is correctly adjusted 2 Belt
- Nut to fasten the pulley Clutch 5
- 6 7
  - Motor pulley

4 Pulley

3

Type and BKE [mm]	Skate P	osition	Panels Positions [mm]
C2-EU and 800	Opened	Closed	258
C2-EU and 900	Opened	Closed	243

### Synchronization Cable Pulleys



	4.13 Safety Gears
	4.13.1 Safety Gear SA GED
	4.13.1.1 Overview Information
Component Title	Safety gear
Туре	SA GED
Description	The progressive safety gears decelerate the elevator car both in the downward and the upward direction. It can be used either as a double acting safety gear or simply as protection in downward direction.
Overview	6 $6$ $6$ $6$ $6$ $6$ $6$ $6$ $6$ $6$

- Safety gear housing Supporting bolt Disk springs Brake plate Brake shoe Eccentric disk

- 1 2 3 4 5 6

### 4.13.1.2 Maintenance Task List

This instruction defines the minimal requirements per safety component.

Interval (months)	Description
6	Check guide rail condition - clean and oil if necessary <sup>1)</sup>
12	Check movability of movable parts
	Check symmetrical positioning and running clearance of brake pads
	Check actuating mechanism
	Check safety contact
60	Clean safety gear
	Check spring assembly
	Functional check

1) For a proper functioning of the safety gear, the rail blade surface must be completely free from visible dirt and rust and lightly oiled with HLP68.

### 4.13.1.3 Maintenance Checks

### **Guide Rail Check**

Task

<b>WARNING</b>	Safety Safety in seric	Gear Braking Action Impaired by Contaminated Guide Rail Surfaces gears with reduced braking action could result in damage to the installation or bus injury or death.
	For correct braking action of the safety gears:	
	<ul> <li>Clear the guide rail surface from rust, Tectyl<sup>™</sup> and dirt.</li> <li>Use a cloth to lightly oil the guide rail surface with HLP68.</li> </ul>	
Check of Mobility and Running Clearance	Step	Procedure
	1	Push the safety gear downward and sideward (see arrows) and check the
		horizontal and vertical mobility of the safety gear.



Horizontal/Vertical Mobility of the Safety Gear [27202; 28.07.2010]



Check of Interface, Actuation and Seal / Wire


#### 4.13.1.4 Perodic Tests

Tension Pulley Weight

Reduce the overspeed governor tension pulley weight by half:

- Before doing the safety gear test check, do a visual check under the car to make sure that all the relevant components are in good condition.
- Enter the Acceptance Test Mode with the help of the HMI User Interface: Press OK: [10/ /xy], Change to: [20/ /xy], Press OK: [20/ /0], Change to: [20/ /1], Press OK.
  - HMI display shows [20/ /xy]
- With the help of the UP/DOWN buttons choose "Safety Gear Test Empty Car" (Test 75).
  - HMI display shows [ / /75]
- Press OK to confirm your choice.
  - HMI display shows [75/ /]
- Press OK again to enter the test.
  - HMI display shows [75/ / 1] "Test active" and the car moves to the highest floor.
- Connect the recall control and turn JRH to position "Recall".
  - HMI display shows [75/ / 1]
- Press the DRH-D button on the recall control, keep it pressed and press at the same time the OK button on the HMI User Interface.
  - HMI display shows [75/ / 1]
- The elevator starts a trip downwards. "75" is blinking.
   When the inspection speed is reached "75" is blinking together with "1" and the buzzer beeps.
  - HMI display shows [75/ / 1]
- When the buzzer beeps, press the DBV button (on SMICHMI/SMICFC) to engage the safety gear.
  - The car stops and an ACVF error is registered.
  - HMI should show [75/ 1/ ] = Test successful.
  - Indications: [75/ 1/ ] = Test successful, [75/ 0/ 1] ... [75/ 0/ 6] = Test not according to the instruction, [75/ 0/ 7] = Test failed.
- Leave the Acceptance Test Mode: Press ESC until [20/ / 1] is displayed, Change to [20/ / 0], Press OK, Press ESC.
  - HMI display shows [ / /xy]
- Release the safety gear of the car with the help of the recall control. Check for damages on the guide rails.

	4.13.2 Safety Gear - RF0002	
	4.13.2.1 Overview Information	
Component Title	Safety gear	
Туре	Captive roller RF0002	
Description	RF	0002
	Instantaneous safety gear	Туре
Component Layout	Guide rail blade thickness (mm): 10	
	Minimum height of rail blade (mm): 28	
Range of	Tripping Speed [m/s]	Maximum Total Mass RF0002 [kg]
Application	0.50	3264
	0.60	3141
	0.70	3006
	0.80	2865
	0.90	2720
	1.00	2574
	1.10	2431
	1.20	2290
	1.32	2130
	1.65	1734
		Malaas
		Value
		10 mm
		2574 kg
	Car speed	1.0 m/s
	Max. rated counterweight speed	1.0 m/s
	Max. counterweight tripping speed	1.62 m/s
Operation	The safety gear is operated by a slack-rop	e tripping device.
Operating Instructions	The operating instruction contains importan commissioning, usage, and maintenance of avoid risks, to reduce repair cost and outag operating life of the safety gear.	nt advice for proper and safe installation, of the safety gear. Its observance will help to ge time, and to increase the reliability and the

Overview



#### 4.13.2.2 Maintenance Checks

Adjustment

Step	Procedure
1	The knurled braking roller shall be in full contact with the guide rail blade. The distance s1 between the contact area of the safety gear base and the rail blade is to be adjusted to 1.5 mm.
2	The actuating linkage is to be adjusted so that both brake rollers are simultaneously in contact with the guide rails.
3	The position of the safety dear is monitored via a positive-action switch.



Safety Gear Captive Roller RF0002 Adjustment [15195; 05.10.2005]

**Functional Check** Prior to the commissioning of the elevator, set the counterweight to the brake position while in slow speed. While doing so, check whether both braking rollers are in the working position. Then, check the braking force, the safety gear can be operated with rated speed or

Then, check the braking force, the safety gear can be operated with rated speed or overspeed at the attachment to the car.

When the car/counterweight is pulled out of the blocked status, both braking rollers shall return automatically into their idle position.

#### 4.13.2.3 Reset

**Check After Braking** After every braking action the safety gear shall be rechecked by a qualified person. A visual check whether any changes of the braking elements has occurred. The following points are to be rechecked:

- Excessive wear of the braking rollers and the safety gear base.
- Deformations
- Smooth running

The braking marks on the guide face are to be filed down.

# 4.14 Hoistway Door

#### 4.14.1 Preventive Maintenance on Hoistway Door

#### Overview



# Landing Door Miscellaneous

Miscellaneous	Interval	Pos. No	Description
	12 M	-	Check for damages
	12 M	-	Check for corrosion
	12 M	-	Clean and dry mechanism
	12 M	4	Clean main tracks, no oiling
	12 M	1	Clean landing sills
	12 M	1	Check sill gap
	12 M	3	Check vertical parallelism of door panels
	12 M	3	Check alignment of door panels
	12 M	-	Check gaps between door panels and frames
	12 M	-	Check gaps between door panels and door sill
	12 M	-	Check if no tilt of panels
	12 M	-	Check easy and smooth running of door panels
	12 M	5	Check main rollers, counter rollers and retaining washers
	12 M	2	Check guiding shoes
	12 M	7	Check if the door re-closes automatically
Landing Door Specials	Interval	Pos. No	Description
epoolaio			
epoolaio	12 M	-	Check adjustment of landing door interlock
	12 M 12 M	-	Check adjustment of landing door interlock Check door unlocking device
Landing Door Lock	12 M 12 M	- -	Check adjustment of landing door interlock Check door unlocking device
Landing Door Lock	12 M 12 M Interval	- - Pos. No	Check adjustment of landing door interlock Check door unlocking device Description
Landing Door Lock	12 M 12 M Interval 12 M	- - Pos. No 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage
Landing Door Lock	12 M 12 M Interval 12 M 12 M	- - Pos. No 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M	- - Pos. No 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M 12 M	- - Pos. No 6 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing Condition of contact bridge
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M 12 M	- - Pos. No 6 6 6 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing Condition of contact bridge Condition of safety contacts
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M 12 M 12 M 12 M	- - Pos. No 6 6 6 6 6 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing Condition of contact bridge Condition of safety contacts Check lock roller
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M 12 M 12 M 12 M	- - Pos. No 6 6 6 6 6 6 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing Condition of contact bridge Condition of safety contacts Check lock roller Check safety contact (KTS, KNET)
Landing Door Lock	12 M 12 M Interval 12 M 12 M 12 M 12 M 12 M 12 M 12 M 12 M	- - Pos. No 6 6 6 6 6 6 6 6 6 6 6	Check adjustment of landing door interlock Check door unlocking device Description Check of penetration of hook lock and lock engage Check the unlocking device activity Correct function and bearing play of lock roller and lock bearing Condition of contact bridge Condition of safety contacts Check lock roller Check safety contact (KTS, KNET) Check contact bridge

Key of abbreviations:

– M = month

Replacement to be done based on the condition.





#### 4.14.2.2 Maintenance Check and Adjustment

Lock Type C2



Lock Type C2: Hangers in Closed Position [43402603\_002; 16.02.2016]

- 1 Hanger
- 2 Buffer
- 3 Door contact
- 4 Hook lock
- 5 Counter lock
- 6 Lock fixing bolt

# Step Procedure 1 Close the door fully so that the hangers (1) are against the buffers (2). Check the lock function.

Step	Procedure	
2	Check the lock function:	
	<ul> <li>The lock play should be 1.2 3 mm (not adjustable).</li> </ul>	
	<ul> <li>Check the lock play does not break the door contact (3) function.</li> </ul>	
	<ul> <li>The hook lock (4) must be 7 mm engaged to the counter lock (5) before to close the contact (3) with the bridge.</li> </ul>	
3	The trucks must touch the rubbers when the doors are closed. <b>Note:</b> In case of not right function of the lock the full truck has to be replaced. Due to safety reasons it is not allowed to untight the lock fixing bolt (6).	

#### Lock Type T2



Lock Type T2: Hangers in Closed Position [43402603\_003; 16.02.2016]

- Hanger Buffer 1
- 2
- Door contact
- 3 4 Hook lock
- 5 Counter lock
- 6 Lock fixing bolt

#### Step

Close the door fully so that the hangers (1) are against the buffers (2). Check 1 the lock function.

Procedure

	Step	Procedure				
	2	Check the lock function:				
		<ul> <li>The lock play should be 1.2 3 mm (not adjustable).</li> </ul>				
		<ul> <li>Check the lock play does not break the door contact (3) function.</li> </ul>				
		<ul> <li>The hook lock (4) must be 7 mm engaged to the counter lock (5) before to close the contact (3) with the bridge.</li> </ul>				
	3	3 The trucks must touch the rubbers when the doors are closed. <b>Note:</b> In case of not right function of the lock the full truck has to be replaced. Due to safety reasons it is not allowed to untight the lock fixing bolt (6).				
Adjustment of the Lock Rollers						
	3					
	(					
		-8 +8				
		Lock Rollers Adjustment [43402603_004; 16.02.2016]				

- Screw
   Lock roller
   Screw

	Step	Procedure
	1	<ul> <li>With a 5 mm allen key, loosen the screws (1) and set the alignment of the lock rollers (2), starting from the lowest level, as the car is operated upwards. Using a CH 13 spanner, loosen the screws (3) and set the roller position with screw driver.</li> <li>Note: Move the lock rollers unit and position it as shown. Check the clearance between the lock rollers and the car sill is sufficient to provide runby.</li> </ul>
Position of the Coupler between the Landing Lock Rollers		



Coupler Position between Landing Lock Rollers [43402603\_005; 16.02.2016]

Door Type	Α	D	E	F
Landing Door C2	17.5	106	45	100.5
Landing Door T2	22.5	86	25	105.5

4.14.3 Hoistway Door Lock - Wittur Fine Line

#### 4.14.3.1 Overview Information

**Component Title** 

Hoistway door



#### C4/C2 Landing Door Lock



[41140796\_001; 10.05.2017]

# 3 ~ ~ 2 [41140796\_002; 10.05.2017] Hanger 1 Buffer 2 3 Door contact 4 Bridge 5 Counter lock 6 Hook lock

# Step Procedure 1 Close the door completely so that the hangers (1) are against the buffers (2). Make sure that the lock functions correctly as follows: The lock gap is 1 ... 3 mm (not adjustable). The lock gap does not break the door contact (3) when panels are moved apart.

 The hook lock (6) is engaged 7 mm to the counter lock (5) before closing the contact (3) with the bridge (4).

# Lock

**T2 Landing Door** 

	4.14.4	Hoistway Door Lock - Sematic
	4.14.4.1	Overview Information
Component Title	Hoistway	/ door
Туре	H153AB	VX and H153ACTX/H153ABWX

#### 4.14.4.2 Template Instructions

Follow the instructions below, to have a correct coupling between landing door and car door.

Step	Procedure
1	Loosen all the screws of the slave and the lock.



[49424; 29.11.2013]

Step	Procedure
2	Loosen the nut of the rear roller of the master.



[49425; 29.11.2013]

Step	Procedure
3	Couple the slave with the skate.



[49426; 29.11.2013]

Adjust horizontally the slave to reach the distances indicated in the drawing above.

Step	Procedure
4	Apply the template centering the rollers of the master.



[49427; 29.11.2013]

Step	Procedure
5	Tighten the screws of the slave.



[49428; 29.11.2013]

Step	Procedure
6	Tighten the screws of the front roller of the master.



[49429; 29.11.2013]

Step	Procedure
7	Tighten the nut of the rear roller of the master.



[49430; 29.11.2013]

Step	Procedure
8	Remove the template. The adjustment is complete.



[49422; 29.11.2013]

#### 4.14.4.3 Maintenance Checks

Task List

Check the functioning and safety of every landing door lock:

- Check that the doors slide freely, without damages to the panels and with an acceptable noise level when running
- Check that there is no overwear of the panel guide shoes
- Check the conditions of the lower and upper guides
- Check the gap between panels and between panels and side posts
- Check that the wire ropes and belts are not worn out
- Check the belt tension
- Check that the landing door emergency lock release operates properly
- Check that the door operator close limit switch operates properly
- Check that the re-opening device operates properly
- When necessary, grease with a lithium based grease which can be used with temperatures between  $30^\circ$  and +  $120^\circ$
- Check the bottom track cleaning.

# Sliding Guide Shoes - I/L 10~14 4.15 4.15.1 **Overview Information Component Title** Guide shoes Туре I/L 10~14 sliding guide shoes Description The I/L 10~14 sliding guide shoes is a guiding system for the car and/or the counterweight. Overview L10/I10 00015328 105 (50)100 100 $\oplus$ 50



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Guide Shoe L10 [20026; 04.12.2008]

Type		Woight [kg]		
туре –	Liner	Casing	Isolation	
L10	PA, PE, Vulkollan	AL diecast	-	0.3
l10	PA, UHM-PE	AL diecast	PUR	0.5

### Overview I14 / L14



Turne		Material		Weight [kg]
туре –	Liner	Casing	Isolation	
114	PA, UHM-PE	AL diecast	-	0.5
L14	PA, UHM-PE	AL diecast	PUR	2.6

Overview I18 / B22N



Turna		Material		Mainht Deni
Type -	Damper	Casing	Liner	
l18	-	AL diecast	UHM-PE	1.4
4.15.2 Mai	ntenance Task List			

Check the guide shoes and lubricator (if fitted)

Task List

12 M

# 4.15.3 Maintenance Checks

# **Guide Shoes**

Step	Procedure
1	Remove the lubricators (7) on each car sling side.
2	Check that all fastening screws (5) of the guide shoes (1) are tightened.
3	<ul> <li>Check the clearance between the guide rail (3) and the guide shoe lining (2):</li> <li>The clearance must be ≤ 1 mm</li> <li>The total gap A + B must be ≤ 4 mm.</li> </ul>
4	Add or remove wedge (6) between the guide shoe support/upright (4) and guide shoe (1) to adjust the gap $A + B$ . If these clearances can not be achieved any more replace the guide shoe lining (2) of all four guide shoes (1).
5	Check that the thickness of each guide shoe lining (2) is $\geq$ 5 mm or with



# Lubricators

Step	Procedure
1	Check the lubricators (7) for any damages and for leaking oil.
2	Check that the lubricator felts (8) are moistened with oil and that there is an oil film on the guide rails (3).
3	Open the oil tank and carefully add oil.
4	Close the oil tank afterwards and clean up any spilled oil.
5	Check that the dimension is $\geq$ 14 mm. If not, the guide shoe liner must be replaced.



# 5 Technical Documentation

# 5.1 Safety Components and other Certified Components

Device	Component Type	EC-type Certificate	Notified Body	
	Fermator, type 160/10/40	NL 16-400-1002-075-04	LIFTINSTITUUT 0400	
	Fermator, type 210/10/40	Full Quality Assurance	Bureau Veritas 1035	
	Fermator, type 265/11/50	(Annex IX) ES025684-		
	Fermator, type 04/09-009/PR/R	- 1035		
	Wittur, type 11/R-L	ATV 617		
	Wittur, type 01/C	ATV 616	- 100 300 0030	
	Schindler, type DO VAR 15	1081		
Locking Devices	Sematic, type H153ACTX	C 450 00/15	-	
	Sematic, type H153ABWX	- 0.00413	IMQ 0051	
	Sematic, type H152AANX	985	-	
	Sematic, 2000C-MOD including galss door panels	1053	-	
	Wittur, type FINELINE	TÜV-A-AT-1/07/147 CETV	TÜV Austria 0408	
	Schindler - Ets Henri Peignen C11	071/0199 0071		
	Schindler - Ets Henri Peignen T11	0071/0199	-	
Car Safety Gear	Schindler, type GED 10/BS	ABFV 489		
Counterweight Safety Gear	SLC, type RF 0002	AFV 765	TÜV SÜD 0036	
Overspeed Governor	Schindler, SA GBP 201	AGB 081	-	
Ascending Car Overspeed Protection	Leroy Somer FCRD	NL04-400-1002-051-01	LIFTINSTITUUT 0400	
	ACLA, type 300411	08/208/AP 002/300411		
	ACLA, type 300501	44 208 09 555371 or 44 208 09 555371101	-	
	ACLA, type 300400A	44 208 12019088		
Buffers	ACLA, type 300401A	44 208 12019090	-	
	P+S, type D0	44 208 12126196	-	
	P+S, type D2	44 208 12126198	-	
	Oleo, type LSB16.B	BSI-LB-570095	BSI 0086	
Electronic Safety Devices	Schindler, type SUET3.Q	NL03-400-1002-004-30	LIFTINSTITUUT 0400	
Protection against Unintended Car Movement	Schindler detection system combined with MLS brake system.	NL10-400-1002-004-51	LIFTINSTITUUT 0400	
Reduced Top and/or bottom clearances	TSD21	NL11-400-1002-004-54	LIFTINSTITUUT 0400	
Suspension and Traction Media	STM-PV	EU DE 003	TÜV SÜD 0036	

# Schindler 3100/3300/6300

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Device	Component Type	EC-type Certificate	Notified Body
Pit inspection Reset System	Pit inspection Reset System	NL 16-400-1002-004-72	LIFTINSTITUUT 0400
Adapter board	SVABCM	NL 18-400-1002-004-89	LIFTINSTITUUT 0400
Contactor Less Drives (STO)	DR-VAFxxx	968/FSP 1556.01 /18	TOV Rheinland





- Parts that have to be taken as shown are marked in black.

- Parts that have to be added individually are shown in grey/italic.

# 5.2 Manufacturer for Safety Components

Component Type	Manufacturer 1	Manufacturer 2	Manufacturer 3
Fermator, type 160/10/40	Fermator Tecnolama Ctra. Constantí, km. 3 43206- Reus Spain	Fermator Doors Movement Technology, S.L. Pol. Ind. Sort dels Capellans, parcel·la 19 43730 Falset Spain	
Fermator, type 210/10/40	Fermator Tecnolama Ctra. Constantí, km. 3 43206- Reus Spain		
Fermator, type 265/11/50	Fermator Tecnolama Ctra. Constantí, km. 3 43206- Reus Spain		
Fermator, type 04/09-009/PR/R	Fermator Tecnolama Ctra. Constantí, km. 3 43206- Reus Spain		
Wittur, type 11/R-L ATV 617	Wittur S.p.A Via Mecedonio Melloni, 12 43052 Colorno (Parma) Italy	Wittur Elevator Components S.A. Poligono Industrial Malpica, Calle E,num. 8 50016 Zaragoza Spain	Wittur S.R.O. Priemyselná ulica, 2747/7 96301 Krupina Slovakia
Wittur, type 01/C ATV616	Wittur S.p.A Via Mecedonio Melloni, 12 43052 Colorno (Parma) Italy	Wittur Elevator Components S.A. Poligono Industrial Malpica, Calle E,num. 8 50016 Zaragoza Spain	Wittur S.R.O. Priemyselná ulica, 2747/7 96301 Krupina Slovakia
Wittur, type FINELINE	Wittur S.p.A Via Mecedonio Melloni, 12 43052 Colorno (Parma) Italy	Wittur Elevator Components S.A. Poligono Industrial Malpica, Calle E,num. 8 50016 Zaragoza Spain	Wittur S.R.O. Priemyselná ulica, 2747/7 96301 Krupina Slovakia
Sematic type H153ACTX	Sematic Italia Spa Italy Via Zappa COMM.FRANCESCO, 5 I-26064 OSIO SOTTO (BG) Italy		

Component Type	Manufacturer 1	Manufacturer 2	Manufacturer 3
Sematic, type H153ABWX	Sematic Italia Spa Italy		
	Via Zappa COMM.FRANCESCO, 5 I-26064 OSIO SOTTO (BG)		
	Italy		
Sematic, type H152AANX 985	Sematic Italia Spa Italy		
	Via Zappa COMM.FRANCESCO, 5 I-26064 OSIO SOTTO (BG)		
Comptine 20000 MOD			
including glass door panel	Via Zappa COMM.FRANCESCO, 5 I-26064 OSIO SOTTO (BG)		
	Italy		
Schindler - Ets Henri Peignen C11	Fermator (peignen) 3 rue de la Borne Blanche 77380 Combs la Ville France		
Schindler - Ets Henri Peignen T11	Fermator (peignen 3 rue de la Borne Blanche 77380 Combs la Ville France		
SA GED 10/BS	Schindler S.A.		
	Poligono Empresarium,Albardin, 58 ES-50720 La Cartuja Baja - Zaragoza Spain		
SLC, type RF 0002	C. Haushahn GmbH & Co.		
	Aufzuege		
	Address: Heilbronnerstraße 364		
	Stuttgart		
	Country: Germany		
SA GBP 201	Schindler S.A.		
	Poligono Empresarium,Albardin, 58 ES-50720 La Cartuja Baja - Zaragoza Spain		
ACLA, type 300411	ACLA-WERKE GMBH		
ACLA, type 300501	Frankfurter Str. 142 - 190		
ACLA, type 300400A	- 51065 Köln		
ACLA, type 300401A	- Germany		

Component Type	Manufacturer 1	Manufacturer 2	Manufacturer 3
P+S, type D0	Polyurethan-Elastomere		
P+S, type D2	GIIDH & CO. KG		
/ <b>/</b>	Kielweg 17, 49356, Diepholz		
	Germany		
Oleo, type LSB16.B	Oleo Buffers (Shanghai) Company Limited		
	Plant A15 Xinfei Garden		
	No. 802 Shengang Road, Songjiang		
	Shanghai 201612		
	Popular Republic China		
Leroy Somer FCRD	Leroy-Somer / Nidec Group	)	
	Usine de Rabion		
	16015 Angoulême cedex		
	France		

# 5.3 Basic Characteristics of Traction Media and Governor Rope

Characteristic	Values / Comments
Width of STM	30 mm
V-shaped STM	90 °
Min. Breaking force	42.0 KN
Min. Tensile grade of wires	2500 N/mm <sup>2</sup>
12 Fine-strand steel cord, high flexible, left and right lay with galvanized wires	19 + 8 x 7, Ø 1'73 mm
Cover-Material	PU or EPDM
Non-combustible (non-toxic gaz) cover UL 94 Determination toxicity UL 94 In flammability UL 94 (self extinguished) Smoke UL 94	Self-extinguishing
Temperature application range	0 ° 60 °C
Relative humidity	< 90 °

### **Governor Rope**

- Supplier instruction
- According ISO 4344
- Right hand lay rope, ordinary lay
- Single tensile grade of wire 1770 (N/mm2) acc. ISO 4101
- Preformed
- Galvanized drawn grade B acc. to ISO 2232
- Lubrication: Stand 0.2 ... 0.4 % of rope weight, Core < 10 % of core weight
- Post lubrication: non

Nominal Rope Dia. (mm)	Tol.	Туре	Weight (kg/m)	Rope Construction	Min. Breaking Force FZM (kN)	Used for GQ (kg)
6.0	+ 2/+ 6 %	-	0.13	Seal 6 x 19 fibre core chemical PP	> 21.0	320 1000

# 6 Miscellaneous

# 6.1 Disposal of Material

Lubricants, Oils and other Dangerous Substances	Lubricants, oils and other substances or materials, which pollute the environment, must be taken back by the maintenance company and disposed of in conformity with local regulations. If the owner of the installation takes responsibility for the disposal, he must carry it out in accordance with local requirements, and he must also follow the instructions of the maintenance company.		
Spare Parts, Components and Subsystems	Parts, components and subsystems, which are replaced during repair and modernization must be disposed of by the owner of the installation.		
Modernization	Even if your elevator is new today, the time will come when it needs to be modernized. By modernizing your elevator, you protect your investment and preserve the value of your installation. The intensity and type of use of the elevator affects the expected life of the components and systems used.		
	I       Old installation       5       KIT D         2       KIT A       6       KIT E		
	3 KIT B 7 Modernized installation 4 KIT C		
Conformity with Legal Requirements	Changes to regulations can make it necessary to replace or modify specific components of the installation.		
Replacing the Installation	When an installation is completely replaced, the disposal of the old installation must be arranged between the owner of the installation and the installer. In those cases, where the new installation is delivered by Schindler, the company will arrange for disposal of the old installation in consultation with the owner of the installation.		
Step-by-Step Modernization	The modular concept of the elevator installation makes step-by-step modernization possible. Step-by-step modernization will preserve the value of the installation or even increase it. At the same time, the installation will be continuously adapted to the most recent safety regulations and technology. Timely replacement of worn parts will avoid faults and the availability level is kept.		

<b>Cooperation with the</b> Installer Modernization of any type always makes heavy demands on all concerned, and a high degree of cooperation. To keep elevator downtime to a minimum, and to customers' expectations, it is strongly recommended that the modernization b prepared and carried out by the original manufacturing company or installer with the contract was first placed.			
Updating the Installation Documentation	When a modernization has been carried out that changes the way the installation functions, the installation documentation must be brought up-to-date for example, if the control system is modified, the schematic wiring diagrams must be brought up-to-date.		
Your Partner for Modernization	Based on many years of experience, Schindler the original manufacturer of this installation, can guarantee a speedy and professional modernization.		

# 7 Abbreviations

# 7.1 Engineering

Abbreviation	Description	Unit
BFK	Width of guide rail head	mm
GG	Weight of counterweight frame + filling	kg
GH	Weight of traveling cables (half the cable length)	kg
GK	Actual car weight (sling + enclosure)	kg
GKU	GQ+GK+GU+GH (for a car)	kg
GGU	GG+GU+GH (for a counterweight)	kg
GU	Weight of all rope compensation elements	kg
GQ	Rated load	kg
VCA1	Tripping speed of governor of car	m/s
VCA2	Tripping speed of governor of counterweight	m/s
VKN	Rated speed of the car	m/s
VKI	Inspection speed	m/s
S	Running clearance	mm
HQ	Maximum travel height	m
HFP	Height of profile of guide rail	mm

Abbreviation	Description	Unit
DZ	Governor rope diameter	mm
FC	Friction force of rope at speed governor	Ν
FCU	Tension force of governor rope at return pulley	Ν
FLC	Engaging force of safety gear at governor lever	Ν
HQ	Maximum travel height	m
VCA (1/2)	Tripping speed of governor (1 car, 2 counterweight)	m/s
VCAG	Max. possible tripping speed of governor in free fall	m/s
VCK (1/2)	Operating speed of governor contact (1 car, 2 counterweight)	m/s
VKN	Rated speed of the car	m/s
VKI	Inspection speed	m/s

Abbreviation	Description	Unit
BFK	Width of guide rail head	mm
FC	Friction force of rope at speed governor (in down/up direction)	Ν
FLC	Engagement force of safety gear at governor lever	N
GG	Weight of counterweight frame + filling	kg
GGU	GG+GU+ GH (for a counterweight)	kg

Abbreviation	Description	Unit
GH	Weight of traveling cables (half the cable length)	kg
GK	Actual car weight (sling + enclosure)	kg
GKU	GQ+GK+GU+GH (for a car)	kg
GQ	Rated load	kg
GU	Weight of all rope compensation elements	kg
HFP	Height of profile of guide rail	mm

Designation	Description
SA	Safety component
GED	Double acting progressive safety gear with eccenter
1	Size (1 or 2)
0	Version (0 or 5)
Α	Used guide rail type (A = cold drawn, B = machined)
S	Used car type (S = centered, R = cantilever)

Abbreviation	Description	Unit	Safety Gear Type	
		-	SA GED 10/15	SA GED 20
Α	Width of safety gear	[mm]	253	285
В	Height of safety gear	[mm]	125	146
C	Depth of safety gear	[mm]	112	122
D	Distance to supporting bolt (height)	[mm]	100	116
E	Distance to supporting bolt (depth)	[mm]	42	41
F	Supporting bolt diameter	[mm]	24	28
Α	Width of safety gear	[mm]	253	285

Designation	Description
HP	Buffer height
HPH	Buffer stroke
VPAZ	Maximum admissible speed of impact on buffer
VKNZ	Maximum admissible rated speed
GPZ1	Minimum admissible mass for one buffer
GPZ2	Maximum admissible mass for one buffer
GP	Weight of the buffer (without oil)

# 7.2 Control Functions

Abbreviation	Meaning
AAT	Automatic Acceptance Test
ACVTF	Alternating Current Drive with Variable Frequency
AN1	Anti Nuisance Type 1 Anti Nuisance Operation
ASMTL	Approach Speed Monitoring at Terminal Landing
BAT	Battery
BIOGIO	BIObus General Input Output
BR	Brake Resistor Brake resistor
BR1	Fire service type 1
CAN	Controlled Area Network
CCU	Car Control Unit OKR on car roof
CLC	Car Load Cell Car load cell
CLSD	Communication Line Sharing Device
COP	Car Operating Panel
CPIF	Car Position Indicator main Floor
CPIAF	Car position indicator on all floors
CRC	Card Reader Car Parallel card reader interface
CSC	Car Safety Circuit Safety circuit car
DA1/2	Alarm Pushbutton
DBV	Push button speed governor
DFM-U/D	Manual Up Down button on control
DIP switch	Dual In-line Package
DM236	Alarm device for Italy
DREC-D/U	UP/DOWN Switch – Inspection Control
EC	Elevator Control Elevator Control
EBR1	Floor Under Fire
ETM	Embedded telemonitoring
FC	Frequency converter
FLC	Floor light control
GBP	Overspeed Governor
GS	Visitors Control
HCU	Automatic Evacuation Unit in hoistway
НМІ	User Interface HMI
IG	Incremental Encoder
IRTS	Safety circuit indication hoistway doors
INT	Interface
ISK	Safety circuit indication
ISPT	Safety circuit indication blocking door

Abbreviation	Meaning
IUSK	Safety circuit indication source
JAB	Switch out of service
JDC	Switch car call
JEM	Switch manual evacuation
JFIH	Protection main switch light
FI	RCD protection main switch
JNFF	Switch fire fighting
JH	Switch main power
JHSG	Stop switch hoistway pit`
JREC	Switch inspection car
JRVC	Switch reservation travel car
JTH	Switch thermal
JTHS	Switch, Thermal Elev. Control
KBF	Contact Fire Service
KBV	Contact Speed Governor
KCBD	Blocking of car at top of hoistway
KF	Contact Safety Gear
KLSG	Contact ladder hoistway pit
KL-V	Contact full load
КРН	Contact supervision phases
KNET	Contact unlocking landing door
KNE	Contact final limit
KSKB	Contact door closing limiter
KSS	Contact Slack Rope Governor
KTHM	Thermal sensor machine room
КТС	Contact door car
KTS	Contact door hoistway
KTZ	Contact door access side
LAGC	Lamp Alarm Memory Car
LARC	Lamp Alarm Registered Car
LC	Lamp Car
LCUX	Landing fixtures
LEFC	Lamp Evacuation Travel Car
LIN	Floor indicator/travel
LIFD	Long distance between two floors
LMG	Load Measurement Unit
LNC	Lamp Emergency Light Car
LOP	Landing operation panel
LUET	Lamp Overbridging Door

Abbreviation	Meaning
MGB	Magnetic Brake
NC	Normally Closed contact
NO	Normally Open contact
NS21	Emergency Power
PA1	Parking Type 1
PHS	Photocell floor level
PHUET	Photocell floor level
RBE	Relay brake evacuation
RCD	Residual current protection
RLC-A	Relay lamp car OFF
RTS	Safety circuit indication hoistway doors
SAB	Servitel out of service
SCIC	CPU PCB
SCOP	Car Operating Panel
SDIC7x	CCU main PCB
SDM236	Alarm indication PCB, option for Italy only
SEM3x	PCB for evacuation
SF	Contactor travel
SIM	Subscriber Identity
SKA	Stopping Distance
SLIN	LIN PCB
SMICHMI/ SMICFC	Control cabinet main PCB
SNGL	Manual evacuation and emergency power PCB
SUET	Door Bridging PCB
SW	Software
TACC	Tele alarm control center
TDIF	Travel direction indicator
TELA	Telealarm device
TS	Transformer Elevator Control
VEC	Ventilator car