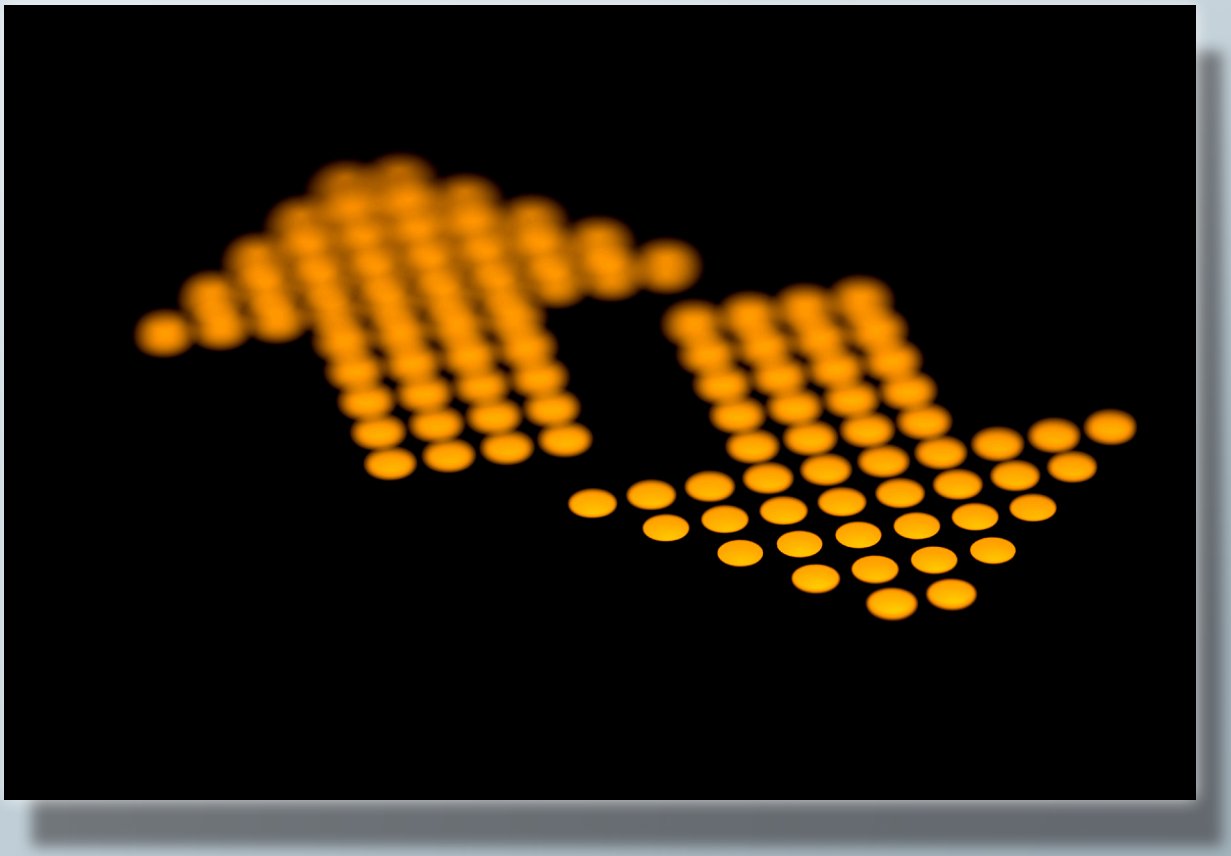
MANUAL

NEWLIFT
NEUE ELEKTRONISCHE WEGE

EN81-20

Additonal functions



Manufacturer

NEW *LIFT* Neue elektronische Wege
Steuerungsbau GmbH
Lochhamer Schlag 8
82166 Gräfelfing
Tel +49 89 – 898 66 – 0
Fax +49 89 – 898 66 – 300
Mail info@newlift.de
www.newlift.de

Service line

Tel +49 89 – 898 66 – 110
Mail service@newlift.de

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Author AL

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Contents

1 General

This manual is intended as a supplementary function description and set of testing instructions relating to the principal modifications and changes made to the NEW LIFT products as a result of the standard EN81-20/50:2014.

The manuals for the FST-2XT/XTs products as well as the installation and commissioning manuals therefore remain applicable and must continue to be observed. The designation FST-2 used in the following chapters refers to the control system types FST-2XT and FST-2XTs.

1.1 Abbreviations, characters and symbols used

Symbol / abbreviation	Meaning
FST	Field bus controller
FSM	Car top control module
ADM	Landing call module
▶	**Operational instructions** Perform the tasks that follow this symbol in the specified order.
•	Action step under the respective operational instruction
	***Warning notice*** This symbol is located in front of safety-relevant information
	***Information notice*** This symbol is located in front of relevant information.

1.2 Notation

Notation	Meaning
Bold	› Designations of switches and actuators › Input values
Italics	› Captions › Cross references › Designations of functions and signals › Product names
Bold italics	› Remarks
LCD font	› System messages of the controller › Operating level, parameters, paths, and input and display values of the FST menu.

1.3 Further information

The following documents, among others, are available for the FST control system and its components:

› ADM Manual
› EAZ 256 Manual
› EAZ TFT.45.110.210 Manual
› FPM Manual
› FST-2XT/s Manual
› FST-2XT MRL Manual
› FST Installation & Commissioning Manual
› GST-XT Manual
› LCS Manual
› RIO Manual
› SAM Manual
› UCM-A3 Manual
› Update-Backup-Analysis Manual

These and other up to date manuals can be found in the download area of our website unter Service https://www.newlift.de/downloads-311.html

1.4 How to contact us

If, after referring to this manual, you still require assistance, our service line is there for you:

Phone	+49 89 – 898 66 – 110
E-mail	service@newlift.de
Mon. - Thurs.:	8:00 a.m. – 12:00 p.m. and 1:00 p.m. – 5:00 p.m.
Fr:	8:00 a.m. – 3:00 p.m.

2 What's new?

2.1 Standard EN81-20/50:20:2014

› DIN 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 lifts

› DIN 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.

2.2 Overview of key changes due to EN81-20/50:2014

	Description of additional function	Normative references
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2)	*3.2 Shaft pit inspection control, page 8*	5.2.1.5.1 b)
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4)	*3.4 Inspection speed at end floors, page 10*	5.12.1.5.2.1 f)
5)	*3.5 Light barrier test (testing of protective device with automatically force-activated doors), page 11*	5.3.6.2.2.1 b) 4)
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13)	*3.13 Trapping protection with glass doors, page 17*	5.3.6.2.2.1 h)
14)	*3.14 Remote-access protection, page 17*	5.12.1.7

3 Description of additional functions

3.1 Drive button for inspection

Both inspection controls (car / pit) have a **COMMON button** or drive button. This button interrupts the safety circuit when in the non-actuated state. Travel is not possible unless this button is also pressed.

3.2 Shaft pit inspection control

In addition to the inspection control device on the car roof, there is also an inspection control (pit set) permanently installed in the shaft pit. Owing to the position required for the emergency braking switches and the pushbutton for the shaft light, the pit set consists of the following units:

Inspection control

› Emergency braking switch (emergency stop switch)
› Inspection ON
› UP / DOWN button
› COMMON button (drive button)
› Emergency call button

Pit module

› Emergency braking switch (emergency stop switch)
› Shaft light button
› 230VAC earthed socket

It must be ensured that the elements of the inspection control system can be operated by persons trapped in the shaft pit.

► Observe the following distances when installing the inspection control system and pit module:

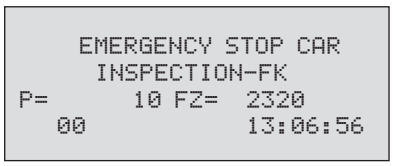
Pit module		
Installation distance from inner edge of door frame:	max.	0.75 m
Height above bottom of lowest floor:	min.	1.00 m
Inspection control		
Distance from protected space:	max.	0.30 m
Installation distance from inner edge of door frame:	max.	0.75 m

Junction box

The inspection control and the pit module are brought together in the junction box. Signal exchange with the lift control system takes place via two separate cables for 24VDC and 230VAC.

► Connect the plug-in 24VDC cable to plug **X16**.
► Connect the 230VAC cable to terminal strips **X100** and **X5** as shown in the wiring diagram.
Further information: *See the system circuit diagram.*

Display message



Example

Display	Description
Line B, yellow: `INSPECTION-SG` or `INSPECTION-FK` or `INSPECTION-FK + SG`	Differentiation between inspection modes for the car roof (FK) and shaft pit (SG)

Owing to the dual use of the UP/DOWN inputs of the *auxiliary control* (standard) and *shaft pit inspection control*, a distinction must be made by means of switchover via the I/O port.

Settings required at FST-2

► Under
`Config > I/O Configuration > I/O Ports > I/O PORT [XX]`,
select a port between `[01]` and `[79]`.

► Set the `Raw value` for the selected port to `000047F2`.

3.3 Returning to normal operation after pit inspection

A return to normal operation if *inspection control for pit* was switched on previously is only possible if

› the emergency braking switches are not actuated

› access to the shaft pit is closed and locked, and

› a reset is performed outside the shaft.

The reset can be performed in a number of ways.

Reset using button code

This method uses the landing call button on the lowest floor. The landing call button flashes once per second, thereby signalling readiness for the reset procedure.

Proceed as follows:

► Press the landing call button briefly 3 times (with an interval of at least 0.1 second between each press).

► Wait approx. 1 second.

► Then press the landing call button again briefly 3 times.

press briefly > press briefly > press briefly PAUSE press briefly > press briefly > press briefly

In the case of systems with two access points on the bottom floor, the reset procedure can be performed at both landing call buttons.

An independent monitoring body has declared the reset method as compliant with the requirements of EN81-20. The conformity test certificate is given in the Appendix.
(see "6 Attachment" page 26)

The button code cannot be used for resetting group controllers.
Resetting using the button code should not be used in the case of encrypted landing calls on the bottom floor.

Reset using key switch (second variant)

In the case of resetting with the key switch, the reset is triggered via an ADM remote port in the landing call panel or directly in the control cabinet.

Requirements:

› If the control cabinet is positioned close to the access point, a key switch must be provided in the bottom landing call button panel / in the control cabinet.

› The remote port on the landing call module or on the position indicator must be taken into consideration.

Settings required at FST-2

RESET USING KEY SWITCH IN LANDING CALL PANEL AS NORMALLY OPEN (NO) CONTACT

► Select a port between `[01]` and `[79]`:
`Config > I/O Configuration > I/O Ports > I/O PORT [XX].`

► Set the `Raw value` for the selected port:
`00004BF2 (NO)`

RESET USING KEY SWITCH IN CONTROL CABINET AS NORMALLY CLOSED (NC) CONTACT

► Select a port between `[01]` and `[79]`:
`Config > I/O Configuration > I/O Ports > I/O PORT [XX].`

► Set the `Raw value` for the selected port:
`00004BF3 (F2)`

REMOTE OUTPUT 0

► Select a port between `[01]` and `[79]`:
`Config > I/O Configuration > I/O Ports > I/O PORT [XX].`

► Set the `Raw value` for the remote port to `00003584`.

► Bridge this port with the port which was set to the value `00004BFX` for the RESET.

3.4 Inspection speed at end floors

The speed of the car must not exceed 0.3 m/s if the free, vertical distance of the standing surfaces on the car roof or in the shaft pit is less than 2.0 m. The fast inspection speed is thereby switched off 2000 mm (default setting) before “level” with the bottom and top floor is reached. Only travel at a speed of less than 0.3 m/s is possible after this point, taking the deceleration curve into account. This applies to end floor approach as well as end floor departure. In the case of reduced or absent protected spaces, the switch-off point may have to be adjusted on site by the lift engineer.

Settings required at FST-2

► `Positioning / Global / Inspectn.-Fast / 2000mm` (default)

► `System / Factory Menu / EN 81 Options / EN81-20 / Insp-Fast Ctrl / YES` (default)

3.5 Light barrier test (testing of protective device with automatically force-activated doors)

Shortly before the door opens, the *FST-2 controller* expects a change in level at the light barrier input or at inputs *FSM-2 X6.8* or *X10.8*. If this change in level does not occur, the *on-board piezo buzzer* sounds via *FPM-1*, *FPM-2* or *TFT.110* each time the door closes. In addition, the door control unit must limit the kinetic energy to 4J each time the door closes. To activate this limit, relay *K1* (nudging) at the *FSM-2* picks up.

The level of the NO/NC light curtain is irrelevant because it can be set in the FST-2 menu under

`MAIN MAIN MENU / Doors / Doors-Basic / I/P Photocell: NO` or `NC`.

As a safeguard against wire breakage, NEW LIFT recommends the use of light curtains with NC (not interrupted = idle state).

Some light curtain manufacturers provide a test input as a test function. If this test input is activated, the level at the light barrier input of the FSM-2 changes. The same effect can be achieved by switching off the power supply to the receiver strip. Alternatively, the evaluation of an error message output at the light curtain (if available) can be used.

Deactivation in the case of light curtains with additional control units should be avoided owing to the service life of the power supply unit and due to the initialisation time.

Function sequence for TEST OK

Door closes → Door is closed → K5 is active and switches the test input of the light curtain → Transmitter strip is switched off → FST-2 signals the "interrupted" light barrier with the symbol `>A*<` or `>B*<` → Door opens by means of a call or command → K5 drops out, test input of the light curtain open → Transmitter strip is switched on → Change in level is detected by the FST-2 → Function OK.

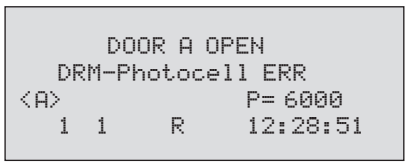
Function sequence for TEST NOT OK

If there is no change in level, the message `DRM-Photocell ERR` is shown in line B of the FST-2 display. This error is entered in the error list with `TIME / DATE / FLOOR`.

The system is not shut down; operation with deactivated light barrier functionality is possible, but with reduced kinetic energy and with acoustic signal.
This is indicated by `NUDGE TIME!` in line B of the FST-2 display.

Each time the door is opened again, the FST-2 checks whether the signal state of the light curtain is faulty. If this is no longer the case, nudging is cancelled.

Display message



Example

Display	Description / attributes
Line B, yellow: DRM-Photocell ERR	If the door(s) is (are) closed and the supply voltage of the receiver is interrupted and no change in level is detected, the error "*DRM-Photocell ERR*" appears the next time the door(s) is (are) opened. This message appears only once and is stored in the error list.
Line B, yellow: NUDG TIME	For as long as this fault persists, "*Nudging*" will be displayed each time the door is closed.
Line C, blue: >A*<	If the light barriers are active, the symbol for interrupted light barrier "*" appears when the door is closed.

Settings required at FST-2

- ▶ SYSTEM / Factory Menu / EN 81 Options / EN81-20 / Test Photocell / YES
- ▶ SYSTEM / Factory Menu / EN81 Options / EN81 20 / PC PowerFSM-K5 / YES

or

- ▶ for a selected port, set the Raw value to 00007384, then
- ▶ SYSTEM / Factory Menu / EN81 Options / EN81 20 / PC PowerFSM-K5 / NO

or alternatively

- ▶ for the evaluation of an error message output at the light curtain for a selected port, set the Raw value to 00004CF2, then
- ▶ SYSTEM / Factory Menu / EN 81 Options / EN81-20 / Test Photocell / NO
- ▶ SYSTEM / Factory Menu / EN81 Options / EN81 20 / PC PowerFSM-K5 / NO

3.6 Car roof emergency light

According to EN81-20 5.4.10.4, emergency lighting with an automatic, rechargeable auxiliary power source must be present and provide an illumination level of min. 5 lux for the duration of 1 hour, measured 1 m above the centre of the car roof.

Required connections

- ▶ Connect the emergency lighting of type *LED Emergency Lighting 230V, 2W, 2m, Magnet* to terminals **X19.7 (L)** and **19.9 (N)** in the car top box of the *FSM-2*.
- ▶ Set the brightness switch on the light to switch position **I** or **II**.
- ▶ Position the light using the magnets so that the above-mentioned, normative requirement is fulfilled

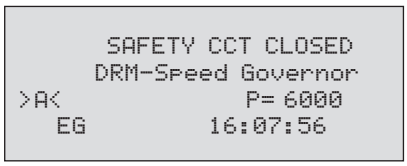
.

3.7 Latching of speed limiter contact

After the device for protecting the upward-travelling car against excessive speed has been triggered, the lift must be returned to normal operation by an experienced maintenance technician. This can be done using a detent switch on the speed limiter. If the speed limiter does not have such a switch, the FST-2 controller can perform the detent function. This requires a floating contact at the speed limiter which transmits triggering of the protective device to the FST-2. If a second contact is not available, the first speed limiter contact can be replicated by means of a safety relay.

When the speed limiter triggers, the FST-2 or the FSM-2 receives the signal to stop the car via a contact. Shutdown is signalled by the message `DRM-Speed Governor` in the FST-2 display.

Display message



Example

Display	Description / attributes
Line B, yellow: `DRM-Speed Governor`	› The error causes the car to stop › The error is power-failure-proof › Reset only via `Test menu / Fault reset` › The error is stored in the error list › Return and inspection drive is possible if the safety circuit is closed

Settings required at FST-2

▶ Under `Config > I/O Configuration > I/O Ports > I/O PORT [XX]`, select a port between `[01]` and `[79]`.

▶ Set the `Raw value` for the selected port:

- for `000049F2` NO
- for `000049F3` NC

3.8 Latching of arrest switch contact

After the engaged safety gear has been released, an experienced maintenance technician is required to put the lift back into operation. This can be done using a detent switch on the safety gear. If the safety gear does not have such a switch, the FST-2 controller can perform the detent function.

A floating contact at the switch of the safety gear is required for this purpose; this contact signals the triggering to the FST or FSM-2. If a second contact is not available, the first arrest contact can be replicated by means of a safety relay.

When the safety gear triggers, the FSM-2 receives the signal to stop the car via a contact. Shutdown is signalled by the message `DRM Safety (XX)` in the FST-2 display. The error message also indicates the direction in which the safety gear has triggered.

Display message

```
      SAFETY CCT CLOSED
   DRM Safety (Up)
>A<              P= 6000
   EG            16:04:28
```

Example

Display	Description / attributes
Line B, yellow: `DRM Safety (Up)` or `DRM Safety (Dn)` or `DRM Safety ( - )`	› The error causes the car to stop › The error is power-failure-proof › Reset only via `Test menu / Fault reset` › The error is stored in the error list › Return and inspection drive is possible if the safety circuit is closed

Settings required at FST-2

▶ Select a port between `[01]` and `[79]`:
`Config > I/O Configuration > I/O Ports > I/O PORT [XX].`

▶ Set the `Raw value` for the selected port as follows:

- for `000048F2` NO
- for `000048F3` NC

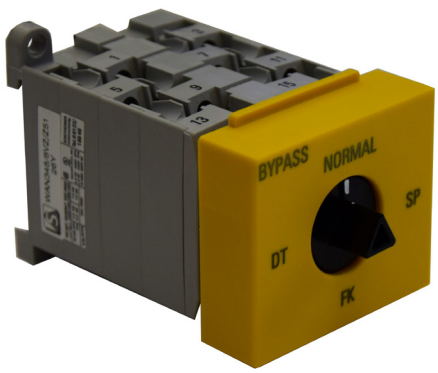
3.9 Residual current devices for car circuits

All circuits on the car roof which are higher than 50 VAC must be protected by a residual current device (RCD) with a maximum tripping current of 30 mA. One or possibly more RCDs are necessary as a result of this requirement.

As standard, the door drive (F5) is fed via one RCD. All other circuits (in accordance with EN81-20: Sect. 5.10.1.2.3) are already protected by RCDs.

3.10 Bypass switch

The bypass function is only possible in combination with a door end switch.



Bypass switch

To enable maintenance activities at shaft door contacts, car door contacts and door locking contacts, a means to bridge the individual contact circuits is provided in the form of a cam switch labelled *BYPASS* in the control cabinet or on the lift elevator attendant panel.

The switch is operated using an emergency key in order to prevent inadvertent operation.

If the switch is turned to one of the three bridging settings, door activation remains inactive until a drive command is present at the inspection or auxiliary control. As soon as the door end switch of the car door(s) signals *closed*, travel with bridged contact circuit is possible.
At the same time, a visual/acoustic signal which is under the car floor is activated.
The signal can also be activated with the "on-board" relay *K4* on the FSM-2. If the relay is used for the original application area, i.e. *retiring cam B*, it is also possible to use an I/O port for an external relay.

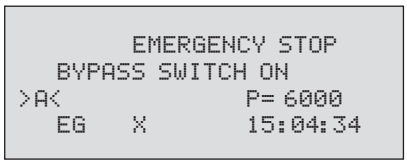
Switch positions

Switch position	Property
Normal (BYPASS OFF)	Safety circuit for normal, inspection or auxiliary mode drive is closed
SP	Bridging of the door lock circuit*
FK	Bridging of the car door contact circuit*
DT	Bridging of the manual door contact circuit*

* In this position, the safety circuit for normal drive is interrupted; the inspection or auxiliary mode drive is closed.

NORMAL, SP, FK and DT are shown in the system circuit diagram as an additional equipment labelling.

Display message



Example

Display	Description / attributes
Line B, blue: `BYPASS SWITCH ON`	› The message appears for approx. 4 seconds
Line D, yellow: `X [BYPASS]`	› The message is stored in the error list › Return and inspection drive is possible if the safety circuit is closed.

Settings required at FST-2

- Under
  `Config > I/O Configuration > I/O Ports > I/O PORT [XX]`,
  select a port between `[01]` and `[79]`.
- Set the `Raw value` for the selected port to `00004AF2`.

▶ Set the visual/acoustic output signal:

- `System / Factory Menu / EN 81 Options / EN81-20 / Bypass FSM-K4 = YES`

or

- for a selected port, set the `Raw value` to `00007284`.
- `System / Factory Menu / EN 81 Options / EN81-20 / Bypass FSM-K4 = NO`

3.11 Monitoring of door contact circuit

Correct operation of the contact circuits of the car doors, shaft door locking mechanism as well as the *end switch CLOSED* signal are checked when the car is in the unlocking zone, the car door is open and locking of the shaft doors is cancelled. This testing function requires an active, fully functional safety circuit bypass control for approach and relevelling with open door, i.e. zone switching incl. encoder A and B (magnet switches).

Monitoring of the door contact circuit is only possible in combination with a door end switch.

Display message

```
     SAFETY CCT CLOSED
   DRM-Door Bridged
>A<   >B<     P= 6000
   K  X  X    10:21:15
```

Example

Display	Description / attributes
Line B, yellow: DRM-Door Bridged	› The DRM error is stored in the error list. › The error is not power-failure-proof › The error can be reset in the test menu after the bridges have been removed or when the doors are closed.

Settings required at FST-2

▶ System / Factory Menu / EN81 Option / EN81-20 / Test door contact = YES

▶ Set the end switch to YES:
Doors / Doors-Selective / Endswitches = YES

The parameters PRE-OPENING (approach with open door) and RELEVELLING (with open door) do not have to be active.

3.12 Maximum speed in auxiliary mode

The speed of the car must not exceed 0.30 m/s in auxiliary control mode.

Display message

```
     EMERGENCY STOP
    REVISION TOO FAST
>A<             P= 6000
  EG            15:04:34
```

Example

Display	Description / attributes
Line B, yellow: REVISION TOO FAST	› The error causes the car to stop › The error remains active until the value drops below the threshold value again.

Factory settings at FST-2

▶System / Factory Menu / Settings / V - AuxiliaryMax > 300mm/s

3.13 Trapping protection with glass doors

Automatically force-activated glass doors must have a device for limiting the opening force to 150 N and for stopping in the event of limbs being drawn in.

If the reversing input of the FSM-2 is active while the door is being opened, the door movement is stopped immediately. The stop remains active until the reversing input (#) returns to its original state. The active reversing input is indicated by the symbol #.

Display message

Example

Display	Description / attributes
Line B, red: Glass Door Stopped Line C, blue: >A#<>B#<	› The error causes the door to stop immediately. › Stop remains active until the reversing contact returns to its original state. › The error is stored in the error list. › The error disappears in the display 15 seconds after the reversing contact has returned to its original state. › During this time, the door open, door closed, call and command buttons do not function.

Settings required at FST-2

▶System / Factory Menu / EN81 Options / EN81-20 / Test Glass Door = YES

3.14 Remote-access protection

When maintenance is being performed, the ServiceMode parameter in the test menu provides the possibility of stopping remote access. When activated, all lift call buttons are disabled. Commands on the end floors are possible. The Block Door parameter, also in the test menu, is used to lock the door.

Settings required at FST-2

▶System / Factory Menu / EN81 Options / EN81-20 / No Rem. Access / YES

This setting disables all lift call buttons as well as the keypad of the FST-2. The car-call button function remains operational.

4 Quick reference

4.1 Relevant EN81-20 parameters

Parameter	Description	Setting range Factory setting (underlined)
Positioning / Global / Inspectn.-Fast	The set value specifies the deceleration point of the fast inspection drive before the level position of the end floor. ***If the value is set too small, the car can run into the end switch!***	0000....5000 2000
Doors / Doors-Basic / I/P Photocell	Level of the light barrier inputs at the FSM-2 X6.8, X10.8. Setting for the state when the light barrier is not interrupted. ***NEW LIFT recommends light curtains as an NC (normally closed) contact.***	NO / NC
Doors / Doors-Basic / I/P Reverse. Sw	Level of the reversing contact inputs at the FSM-2 X6.6, X10.6. Setting for the state if the reversing contact has not reacted. ***NEW LIFT recommends reversing contacts as an NC (normally closed) contact.***	NO / NC
Doors / Doors-Selective / Endswitches	The setting specifies that the door can be operated with/without a door end switch. For EN81-20, this parameter must be set to **YES**.	YES

Parameter	Description	Setting range Factory setting (underlined)
System / Factory Menu / EN 81 Options / Insp-Fast Ctrl	The *Fast Inspection* function also remains inactive during travel out of the reduced area of the end floors.	YES / NO
System / Factory Menu / EN 81 Options / No Rem. Access:	The setting **YES** disables all lift call buttons as well as the keypad. The car-call button function remains active.	YES / NO
System / Factory Menu / EN 81 Options / Bypass FSM-K4	The setting **YES** activates relay **K4** on the FSM-2 for activation of a visual/acoustic signal under the cab floor. The setting is order-specific.	YES / NO
System / Factory Menu / EN 81 Options / Test Photocell	The setting **YES** activates the function sequence required for continuously checking the signal state of the light curtain when the door is opened. The setting is order-specific. The light barrier error message input is available as an alternative: 00004CF2 *See 4.2 Relevant EN81-20 I/O port settings, page 20.*	YES / NO

Parameter	Description	Setting range Factory setting (underlined)
System / Factory Menu / EN 81 Options / PC PowerFSM-K5	The setting **YES** activates shutdown of the power supply via relay **K5** (FSM-2) of the light curtain. The setting is order-specific. The light barrier error message input is available as an alternative: 00004CF2 *See 4.2 Relevant EN81-20 I/O port settings, page 20.*	YES / NO
System / Factory Menu / EN 81 Options / Hydr. Turn-stop	Behaviour when stopping a change in direction in the event of over temperature in hydraulic systems.	YES / NO
System / Factory Menu / EN 81 Options / Test Door Scct	The setting **YES** activates monitoring of the door contact circuits.	YES / NO
System / Factory Menu / EN 81 Options / Glass Door Mon	The setting **YES** cancels the *DOOR OPEN* signal as soon as the reversing input becomes active during opening. The setting is order-specific.	YES / NO
System / Factory Menu / Settings / V - Inspect. Max	Monitoring of the maximum permitted inspection speed	0-2000mm/s 700mm/s
System / Factory Menu / Settings / V - AuxiliaryMax	Monitoring of the maximum permitted auxiliary control speed	0-2000mm/s 300mm/s

4.2 Relevant EN81-20 I/O port settings

Value	Description	Setting range Factory setting (underlined)
000047F2	Pit inspection ON F3 = NC	000047F2 or F3
000048F2	Safety gear triggered F3= NC, Parameter is order-specific.	000048F2 or F3
000049F2	Speed limiter triggered F3= NC, Parameter is order-specific	000049F2 or F3
00004AF2	Bypass switch ON F3 = NC	00004AF2
00004BF2	Pit inspection reset F3= NC, Parameter is order-specific	00004BF2
000d4CF2	Light barrier error message input d: 0= door A, 1 = door B, 2 = door C F3 = NC	000d4CF2
00007284	Output signal when bypass switch activated	00007284
00007384	Output signal for shutdown of power supply for light curtain; alternative to K5 of FSM-2	00007384
00007484	Output signal for RESET enable for external safety device; active in the case of "not in motion" with *Inspection/auxiliary mode ON*; and safety circuit not closed. Parameter is order-specific	00007484

4.3 Error messages

Code	Message	Description	Reason
74	DRM Safety DRM Safety (Dn) DRM Safety (Up) DRM Safety (-)	Safety gear, the evaluation of which runs via an I/O port, has triggered. The direction of travel at the time of the error is displayed.	Safety gear has triggered.
75	DRM-Speed Governor	Speed limiter contact, the evaluation of which runs via an I/O port, has triggered.	Speed limiter has triggered.
76	DRM-Photocell ERR	The change in level at the light barrier input of the FSM-2 following shutdown of the light curtain power supply did not take place. This causes the light curtain to malfunction. The system can continue to be used if the kinetic closing force energy of the car door is reduced and an acoustic signal is sounded during the closing operation. The info byte indicates the door side: 1=A ; 2=B ; 4=C Bits can be combined	› Check the wiring for a wire breakage. › Check whether the light curtain has been switched off › Adjust the light curtain › Replace the light curtain
77	DRM-Door Bridged	Bridging of a door circuit has been detected. This can be the door lock circuit, the car door circuit or the *DOOR CLOSE* end switch of the door drive. The info byte indicates the door side: 0=A ; 1=B ; 2=C	› Check the door lock or car door circuit for possible bridging. › Check the *DOOR CLOSE* end switch.
78	Glass Door Stopped	The reversing contact of the door control unit triggered while a door was opening. The info byte indicates the door side: 0=A ; 1=B ; 2=C	› Objects present in the shaft or car door. › Stiff door; mechanical adjustment is necessary. › Check the electrical connection of the reversing contact. › Check the parameters of the door control unit

5 Function tests

5.1 Checking operation of drive button (COMMON button)

► On the inspection control, set the inspection control switch to **I**.
► Press the **UP / DOWN** buttons one after the other.
The car must remain stationary.
► Press either the **UP** button or the **DOWN** button while at the same time pressing the **COMMON** drive button, and hold down until the car moves in the corresponding direction.
► Release the drive button while the car is moving.
The drive must stop.
The message `EMERGENCY STOP CAR` must appear on the display of the FST-2 controller.

5.2 Checking shaft pit inspection control

► On both inspection controls (*car* and *pit*), set the inspection control switch to **I**.
► On both inspection controls, press the **UP / DOWN** buttons one after the other.
The car must remain stationary.
► Travel should only be possible if the same direction of travel is activated at both inspection controls.
The message `Inspection-FK + SG` must appear on the display of the FST-2 controller.

5.3 Checking return to normal operation after pit inspection

► On the *pit* inspection control, set the inspection control switch to **I** and then back to **0**.
► Make sure that
- the emergency braking switch is not actuated
- access to the shaft pit is closed and locked.

► Press the lift call button.
The car must not move.
► Perform a reset.
Travel must not be possible until the reset has been performed.
see "3.3 Returning to normal operation after pit inspection", page 9.

5.4 Checking operation of inspection speed at end floors

Reduction of the *inspection FAST speed* remains in the shutdown range even during departure.

► Move to an end floor until level or until travel stops automatically.
► Move out in the opposite direction using *Inspection FAST* until the deceleration point is exceeded.
The *inspection drive FAST* must not become active until the deceleration point has been exceeded.

5.5 Checking light barrier test

Each time the door opens, the FST-2 controller expects the level of the light curtain signal to change. If this is not the case, a signal sounds each time the door opens; in addition, the door closes with reduced force.

► In the car top box of the *FSM-2*, connect terminals **8.1** and **8.2** using a wire bridge.
► Open the shaft doors manually.
The message `DRM-Photocell ERR` must appear on the display of the FST-2 controller.
► Close the shaft doors manually.
»The message `Nudge Time` must appear on the display of the FST-2 controller.
»A signal must sound.
»The door must close with reduced force.

5.6 Checking operation of emergency light

► Disconnect the power supply cable from the light or
► switch off the supply voltage using the **RCBO F21** switch in the control cabinet.
The emergency light must light up automatically even if the power supply fails.

5.7 Checking operation of speed limiter contact latching

► Trigger the speed limiter either when stationary or when moving.
The following message must appear on the display of the FST-2 controller:
`DRM-Speed Governor.`
► Perform a RESET via the FST-2 TEST MENU:
Arrow RIGHT / `Fault Reset` / **ENTER.**

5.8 Checking operation of arrest switch contact latching

Dangerous electrical voltage!
Touching electrically live parts either directly or indirectly can result in an electric shock.

Make sure that the system is disconnected from the power supply before beginning the function test.

► Using switch F4.1, disconnect the system from the power supply.
► At terminal strip **X100**, bridge terminals **21** and **22** using a wire bridge.
► At terminal strip **X40**, bridge terminals **98** and **99** using a wire bridge
or
► at terminal strip **X98**, bridge terminals **1** and **2** using a wire bridge
► Using F4.1, switch on the system.
► Trigger the speed limiter while in motion.
One of the following messages must appear on the display of the FST-2 controller:
`›DRM Safety (Up)`
`›DRM Safety (Dn)`
`›DRM Safety ( - )`
► Perform a RESET via the FST-2 TEST MENU:
Arrow RIGHT / `Fault Reset` / **ENTER.**
► Using **F4.1**, disconnect the system from the power supply.
► Remove the wire bridges again.

5.9 Checking residual current device for door drive

► Check the residual current device in accordance with *DGUV (German Social Accident Insurance) regulation 3* and enter the measured value in the test log.

5.10 Checking operation of bypass switch

Partially bridged safety circuit!
The bypass function allows the car to be moved with the safety circuit partially bridged.

Improper handling can result in persons being crushed or falling into the shaft. This can cause extremely severe injury or death.

► Position the car in such a way that there is no danger of falling; block the shaft access points if necessary.

► Open the shaft door using the emergency key and hold open.

► Move the bypass switch from NORMAL to **SP** (door lock or shaft door lock).
The message
`EMERGENCY STOP - BYPASS` must appear on the display of the FST-2 controller.
Travel with inspection or auxiliary control should only be possible with the car door closed.
An acoustic signal sounds as soon as the car moves.

► Move the bypass switch to **FK** (car door contact) and repeat the test.

► Move the bypass switch to **DF** (manual door contact) and repeat the test.

5.11 Checking operation of door contact circuit monitoring

Dangerous electrical voltage!
Touching electrically live parts either directly or indirectly can result in an electric shock.

Make sure that the system is disconnected from the power supply before beginning the function test.

► Using **F4.1**, disconnect the system from the power supply.

► Test the door lock door circuit:

- At terminal strip **X100**, bridge terminals **71** and **74** using a wire bridge.
- Switch on **F4.1**.
- Using the buttons **Shift + UP** or **Shift + DOWN**, give the command to move to the next floor above or below.
  As soon as the door opens, the message
  `DRM-Door Bridged. Normal operation is not possible` appears on the display of the FST-2 controller.
- Perform a RESET via the FST-2 TEST MENU:
  Arrow RIGHT / `Fault Reset` / **ENTER.**
- Using **F4.1**, disconnect the system from the power supply.
- Remove the wire bridge again.

► Test the car door contact circuit:

- At terminal strip **X32**, bridge terminals **1** and **3** using a wire bridge.
- Using the buttons **Shift + UP** or **Shift + DOWN**, give the command to move to the next floor above or below.
  As soon as the door opens, the message
  `DRM-Door Bridged. Normal operation is not possible` appears on the display of the FST-2 controller.
- Perform a RESET via the FST-2 TEST MENU:
  Arrow RIGHT / `Fault Reset` / **ENTER.**
- Using **F4.1**, disconnect the system from the power supply.
- Remove the wire bridge again.

5.12 Checking maximum speed in auxiliary mode

The maximum speed during the auxiliary mode drive must not exceed 300 mm/s.

► Increase the auxiliary speed at the frequency inverter or

► reduce the trigger threshold for the auxiliary speed at the FST-2 under:
`System / Factory Menu / Settings / V - Inspect.Max > 200mm/s.`

► Using the auxiliary control, continue to travel UP or DOWN until

- the speed threshold has been exceeded
- the message
  `REVISION TOO FAST` appears on the display of the FST-2 controller and
- the car stops.

► After the test has been completed, reset the parameters to their original values.

5.13 Checking operation of trapping protection with glass doors

► Perform the function test at your own discretion, e.g. using a rubber wedge.

6 Attachment

ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | СЕРТИФИКАТ | شهادة | 证书 | 인증서

TÜV-A-AT-1-16-0466-1

TÜV AUSTRIA

Baumusterprüfbescheinigung

über die Konzeptprüfung einer Abweichung zu EN 81-20:2020

Certificate of Type Examination

about the examination of a concept concerning a deviation to EN 81-20:2020

Produkt / *Product:* Einrichtung zur Rückkehr aus dem Inspektionsbetrieb in den Normalbetrieb mittels Fahrbefehlsgeber

Device of returning from inspection operation to normal operation by control of lift operations

Type / *Type:* FST-2XT und/and FST-2XTs

Antragsdatum / *Date of application:*
25.07.2022

Bescheinigungsnummer / *Certificate number:*
TÜV-A-AT-1-16-0466-1

Zugelassene Stelle / *Approved body:*
TÜV AUSTRIA SERVICES GMBH
Deutschstraße 10
A-1230 Wien

Bescheinigungsinhaber / *Certificate holder:*
NEW LIFT Neue elektronische Wege Steuerungsbau GmbH,
Lochhamer Schlag 8, D-82166 Gräfelfing, DE

Prüfstelle / *Test laboratory:*
TÜV AUSTRIA SERVICES GMBH
Deutschstraße 10
A-1230 Wien

Hersteller / *Manufacturer:*
NEW LIFT Neue elektronische Wege Steuerungsbau GmbH,
Lochhamer Schlag 8, D-82166 Gräfelfing, DE

Prüfgrundlage:
Basis of examination:
Konzept der Abweichung zu
EN 81-20:2020, 5.12.1.5.2.2 c) 2)
Concept of deviation to
EN 81-20:2020, 5.12.1.5.2.2 c) 2)

Datum und Nummer des Prüfprotokolls:
Date and number of laboratory report:
26.07.2022, 2022-AT-0030

Bemerkungen: Das geprüfte Produkt erfüllt die Prüfgrundlagen im Rahmen des im Prüfprotokoll definierten Anwendungsbereichs.
Remarks: *The product fulfils the base of examination in the scope of application, defined in the laboratory report.*

Verbreitung dieser Bescheinigung nur im Ganzen.
Spread of this certificate allowed complete only.

01.08.2022
Gültig ab
Valid from

Ing. Thomas Maldet
Zertifizierungsstelle
Certifying Department

31.07.2027
Gültig bis
Valid until

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007021-19-1

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Attention!

Entering the shaft pit:

1. Before entering the shaft pit operate the emergency braking switch
2. The reset of the emergency braking switch only after switching on the inspection controller of the shaft pit

Leaving the shaft pit:

1. Operate the emergency braking switch of the shaft pit entrance
2. Switch off the inspection controller of the shaft pit
3. Leave the shaft pit
4. Reset the emergency braking switch of the shaft pit entrance

Returning to normal operation:

1. The emergency braking switches in the shaft pit are not operated
2. The shaft pit entrance is closed and locked
3. Enter the button code by pressing the landing call button of the bottom floor: Press briefly **3**x (1 second each time) → **Pause** for 1 second → Press briefly **3** x (1 second each time) → NORMAL OPERATION

This information notice must be attached next to the pit access point in such a way that it can be read before entering the shaft pit. Reference the product manual for further information „hb_EN81-20_XXX-XX“! AL01.06.17 V3 / FST as of V126. Technical changes reserved!

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NOTES

NOTES

NEWLIFT

NEUE ELEKTRONISCHE WEGE

NEW LIFT Neue Elektronische Wege
Steuerungsbau GmbH
Lochhamer Schlag 8
DE 82166 Gräfelfing

+49 (0) 89 898 66 0
+49 (0) 89 898 66 300
info@newlift.de
www.newlift.de

NEW LIFT
Service Center GmbH
Ruwerstraße 16
DE 54427 Kell am See

+49 (0) 6589 919 540
+49 (0) 6589 919 540 300
info@newlift-sc.de
www.newlift.de