

Manual for emergency rescue and Inspection-session of KW-DAVID-613-MRL -System



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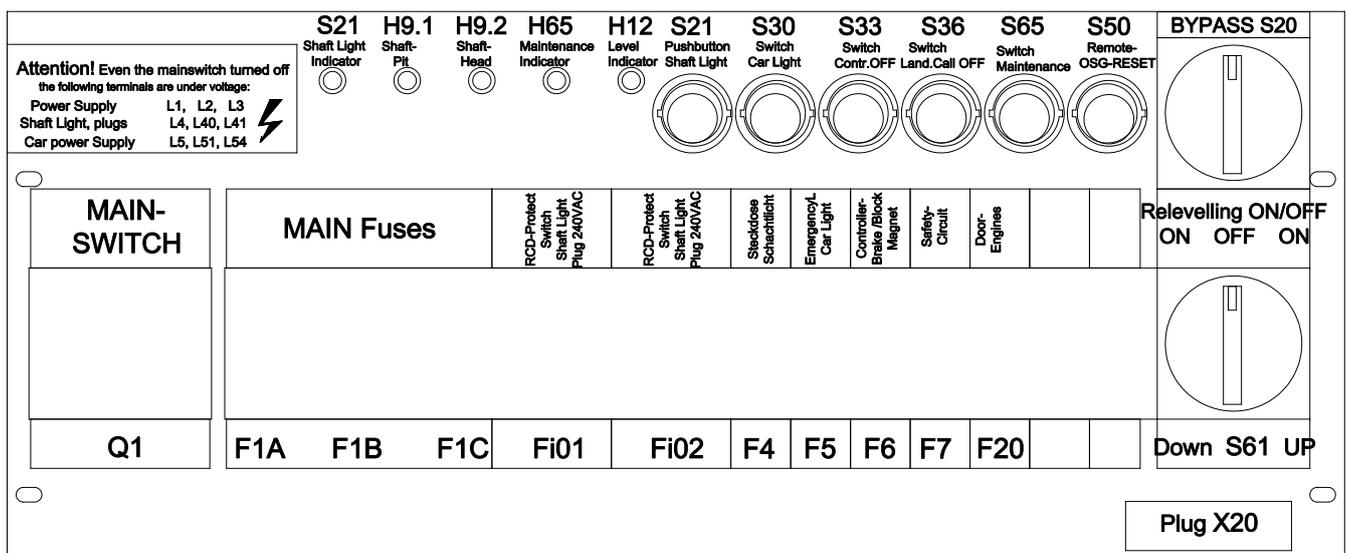
1. Control Panel

The control panel MRL contains all important control elements for the elevator technical personnel and the elevator liberator.

1.1 Picture-control panel MPL



Description of the installed equipment in the control panel MRL



1.2 Explanation of the installed equipment

USV Emergency Power Supply

The USV (Not-break current supply) ordered over own internal battery and makes 230VAC available with voltage failure in order to make a controlled emergency possible rescue of enclosed persons by the elevator attendant. The following plug 230V components are supplied with emergency power:

- 1) Processorsystem DAVID-2005-606
- 2) Brake electric circuit with emergency rescue switcher S80 and the brake opening tracer S81A + S81A as well as braking test taster S82+ S82A.
- 3) Display for car position indicator and level indicator of the car.

Display Car Movement

The display in the control panel replaces the optical monitoring of the driving disk during releveling trip (EN81-1 14.2.1.4) or the emergency rescue of persons. The display indicates following information:

- 1) Floor conditions of the car
- 2) Leveling of the car
- 3) Driving direction of the car

S80 Emergency rescue

The switch S80 serves switching of the emergency power supply on and off. The USV has own internal battery. In order to prevent an unloading of the batteries in normal operation the following must be considered:

- 1) The emergency power supply connect only if necessary over the emergency rescue switcher S80.
- 2) Before leaving the elevator the emergency power supply must switched off over the emergency rescue switcher S80.

S81 Brake open

The braking pushbutton S81 serve manual operating of the left and right circuit of the drive. The emergency rescue of persons can be accomplished thereby.

S82, S82A Brake test

The key taster S82 and the taster S82A serves to the test of the two brake coils A and B and the dual circuit brake. The key is removable only in the OUT-position.

	Attention!
Around the entire lift without tension too must additionally to the main switch Q1, also the safety devices F4, F5, F6 (F7) scolded, as well as the emergency rescue switch S 80 be switched off.	

Q1 Main switcher

The main switcher serves the out and/or on of the lift, the drive regulation the door drive and the safety circuit on. According to European standart EN81 the shaft and passenger lighting must be in function despite switched off main switch Q1. Therefore you consider following safety reference:

F1A-C Main fuse

The main fuses F1A to F1C serve for the security of the frequency inverter and the main drive.

X20 Outlet

The outlet X20(B10A) is on the security of the shaft light with the protection F4. With switched on shaft light the full 10A is not available!

F4 Shaft Light

The fuse F4 secures the shaft lighting, the outlet in the control panel, outlet in the shaft pit and the outlet in the car roof.

F5 Car Light & Emergency power device

The protection F5 secures the entire light-current circle L5 with car light, car fan as well as the emergency power equipment.

F6 Control & USV

The control fuse F6(B10A) secures the entire electric circuit L6 fo the processor system, the USV as well as possibly existing auxiliary power pack NG24.

F7 Safety Circuit The fuse F7 secures the entire safety circuit with B 2A.

F20 Door Drive The protection F20 secures the door drive with B 10A. The main switch Q1 activates the voltage supply of F20.

S61 Releveling control The releveling control makes the movement possible of the car in manual control after EN81-20. The releveling switcher contains the following functions:

Switching position	Function
0: Releveling control S61 OFF	Normal Operation active
1 and 2: Releveling control S61 ON	Switched on with releveling control
UP: Releveling drive UP S61A	Trip of the car into the upward direktion
Down: Releveling drive down S61B	Trip of the car into the downward direktion



Attention!

While driving with releveling control the display serves the movement of the car as optical monitoring. The annunciator “concise” appears if the car is in the unblocking zone of the door. During the trip with releveling control the car movement must be supervised with the help of the display.

S20 Bypass-Switch The Bypass-Switch makes the movement with open shaft door or with open car door possible, according to EN81-20/50. The Bypass switch has the following functions:

Switching position	Function
0: Bypass-Switch S20 OFF	Normal Operation active
A: Bypass- Switch S20A ON	Drive with open shaft-door
B: Bypass- Switch S20B ON	Drive with open car-door

S21 Shaft Light The S21 pushbutton serve to switch on/off the shaft light. H21 indicate the active shaft light.

S30 Car Light The control switch S30 serves for to the disconnection of the car light and introduction of the stand-by trip with the goal of the disconnection of the control and the car light. The stand-by level can be selected freely. The standart value is „ the next level“. That means the fact that with manipulation of the S30 the car continues at the next possible stop and opens the doors and switches after a certain time the light off. The door position is freely selectable. If the car is not full swing then it remains in the stop and implements the functions described in last lines. Naturally also a certain stand-by level can be indicated.

S33 Processor Unit The switch S33 serves the processor unit DAVID-2005 for the disconnection.

S36 Landing Control OFF The switch S36 serves for the disconnection of the landing calls.

S50 Remote Release The tracer S50 serves the coil of the remote release as release. This can only take place with activated functioning of the remote release. The activation takes place in the Inspection menu C4. Please consider the guidance in the manual and/or on the sticker in the inside of the cabinet door.

S65 Maintenance Switch The switch S65 serve to activate the maintenance operation. The led **H65** show the active switch S65.

H12 Level-Indicator The LED H12, Colour Green, serve to indicate, that the car is into the zone of the floor.

2. USV Emergency power supply

The emergency power supply is over a USV(which is integrated behind a lining over the control panel). The USV is activated over the internal switch which is secured over the protection F6. The emergency power of the USV is made available over the emergency rescue switcher S80 of the control.

	<p style="text-align: center;">Attention!</p> <p>The USV has own internal batteries. Therefore the components specified above can be energized also with voltage failure. The current supply connect only if necessary over the emergency rescue switcher S80. Absolutely switch the emergency power supply off over the emergency rescue switcher S80 before leaving the plant.</p>
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First switching on: Proceed as follows when first switching on of the USV on:

- The manual of the USV carefully read.
- The control fuse F6 switch on.
- The emergency freeing switch S80 switch off.
- The USV will uniquely switch on through for pressures „ON/OFF“-switch directly at the USV housing.

The USV message the power-on procedure with a whistler and both light diodes light up for 2 seconds at the equipment front. The USV is ready for use, if after the power-on procedure only the green diode further-shines.

	<p style="text-align: center;">Attention!</p> <p>The USV is not ready for use, if the whistler does not expire after a short time or the green light diode does not shine. The control fuse F6 examine and the manual of the USV read!</p>
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First Loading

After first switching on of the USV on over the awitch S39 the batteries of the USV must be loaded 2-3 hours.
Do not operate emergency rescue switcher S80 during the loading procedure so that USV current not taken.

Maintenance of the USV batteries The batteries of the USV are maintenance-free and by USV electronics are permanently supervised. A battery malfunctioning is indicated of the USV by an acousting signal. (3 whistlers every 2 seconds)

	<p style="text-align: center;">Attention!</p> <p>The inserted lead gel accumulator is subjected to aging. With the existing demand for highest availability an exchange is recommended after one year. Changing the batteries is to be accomplished by technical personnel with expertise over batteries and USV plants with consideration of the caution rules. Closer information finds you in the operating guidance of the USV.</p>
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3.0 Emergency rescue

	<p style="text-align: center;">Attention!</p> <p>The following descriptive measures to the emergency rescue of persons may be accomplished only by instructed elevator attendants and/or technical personnel of elevator companies!</p>
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3.1 Emergency rescue with the help of the releveling control

- 1) Over the intercom announce to enclosed persons about the emergency rescue drive.
- 2) The releveling control S61 switch on. **If you have a Thyssen NBS system, switch ON S2.**
- 3) With the releveling control the car in up and/or downward move and the movement of the car observe in the display of the control panel.
- 4) Only one trip is permitted to the next floor.
- 5) In the display of the control panel if the conciseness is indicated to the car then the car continue and the releveling switch off S61 switch. The door opens automatically and the persons can leave the car.
- 6) If the door does not open main switch Q1 switch off. The door becomes automatic dead switched, so that opening can take place from shaft and car door without large energy expenditure. **If there is a switch S90 Car-Door-Locking, pleas switch ON.**
- 7) In the indicated floor with the help of the emergency release key the shaft door and car door unlock and postpone.
- 8) The enclosed persons free and close the shaft and car door again.

	<p style="text-align: center;">Attention!</p> <p>If the car with the releveling control cannot be moved due to a power failure the persons rescue must be accomplished with the help of the manual brake open taster.</p>
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3.2 Emergency rescue with the help of the manual emergency brake opening

- 1) The main switch Q1 switch off.
- 2) Take up contact to the enclosed persons over the voice communication, you must them calm down and the rescue announce.
- 3) If there is a sink-blocking at the overspeed governor, please switch ON the switch S53 for bridging.
- 4) **If you have a Thyssen NBS system, switch ON the switches S1A and S1B.**
- 5) If you have a electrical brake opening, please switch ON the emergency rescue switch S80.
- 6) Push the Brake opening pushbutton S81 and observe the movement of the car on the display in the control panel . Only would drive through one movement to the next floor.
- 7) Operate the brake opening pushbutton S81 until the levelling of the car in the display of the control panel is indicated.
- 8) In the display of the control panel the conciseness is indicated to the car and the car stop. **If there is a switch S90 Car-Door-Locking, pleas switch ON.** The door drive is already dead switched so that the opening can take place from shaft and car door witout large energy expenditure.
- 9) In the indicated floor with the help of the emergency release key which shaft door and car door unlock and postpone.
- 10) The enclosed persons free and close the shaft and car car door again.

4. Inspection-session

4.0 Execution of the Watchdog Timing

In the submenu **C40 run time** test of the processor system DAVID-613 is possible it to limit all running times for the next trip on 1,0 seconds.

1	The car is in a stop concisely place
2	Adjust the menu C-Diagnosis/ Inspection-session, C40 run time test in the processor DAVID-613. All running times are set on one second
3	Call input by lowest/ highest call at the top side of the DAVID-613 central processing unit in the menu C-Diagnosis /C- Call input
4	The plant opposes with run time error when going away from the stop
5	Unblocking the plant by In-/ Offswitching the switch S33 or releasing of the reset in the menu C-Diagnosis / C0-Reset
6	The system is again in normal operation

4.1 Execution of the buffer trip

In the **submenu C41 buffer trip** is to be driven it possible with the back getting control downward. without obligation delay by the before-finalswhitced 13B on the cab buffers) But only if the limit switch down by technical personal at the strip of passing pressed.

1	The back getting control S61 switch on
2	Adjust the menu C-Diagnosis/ Inspection-session, C41 buffer trip in the processor DAVID-613. the pre-end switch Down S13B is not considered.
3	Switch over hand terminal (HPG-60) into the parameters of the frequency changer (Goliath-60). Increase the parameter "speed Vi" in the menu " desired value" to the desigred worth.
4	The protection F7 switch off and emergency limit switch down bridge. Protection F7 restart.
5	The car drive with the releveling control upwards on the buffer.
6	After examination the car drive upward from the buffer. Bridge from the safety circuit remove and the speed back of Vi put to the the regular value .
7	The releveling control S61 switch off. The control returns to normal operation.

4.2 Execution of the seat sample

In the **submenu C42 seat sample** is to be driven it possible with the back getting control downward. (without obligation delay by the before-final-switched 13B on the counterweight buffers) But only if the limit switch down by technical personal at the strip of passing pressed. The speed for this trip is to be positioned in the regulation.

1	The back getting control S61 switch on
2	Adjust the menu C-Diagnosis/ Inspection-session, C42 seat sample in the processor DAVID-613. the pre-end switch Up S13A is not considered.
3	Switch over hand terminal (HPG-60) into the parameters of the frequency changer (Goliath-60). Increase the parameter "speed Vi" in the menu " desired value" to the desigred worth.
4	The protection F7 switch off and emergency limit switch down bridge. Protection F7 restart.
5	The car drive with the releveling control upwards on the buffer.
6	After examination the car drive upward from the buffer. Bridge from the safety circuit remove and the speed back of Vi put to the the regular value .
7	The releveling control S61 switch off. The control returns to normal operation.

4.3 Execution of the Claw Test of the elevator car

In order to implement the catch sample with the elevator car the car must arrive into the overspeed. This is only possible if that short-circuit protection and the monitoring function $V < 0,2$ m/s deactivated.

1	The car in the center and/or in the upper half of the pit concisely place.
2	Invite the test weights into the elevator car.
3	The releveing control S61 switch on.
4	Adjust the menu C-Diagnosis/ Inspector-session, C43 Claw Test in the processor system DAVID-613. By this parameter that becomes short-circuit protection in frequenz inverter of the series Goliath-60. The monitoring function is waived which prevents the brake opening at a speed of more largely 0,2 m/s.
5	The emergency freeing switch S80 activate and the brake opening key S81 press unto the car has imprisoned.
6	Switch over the hand terminal the HPG-60 into the parameter frequenze inverter Goliath-60. In the menu drive out /stop the parameter catch freeing activate. Thus for short time the current is increased on 2.0 subject of the rated current.
7	The car with the releveing control in upward direction from the catch pull.
8	The back getting control S61 switch off. The control returns to normal operation.

4.4 Driving ability with fixed counterbalance

1	The car is in a highest stop concisely place
2	The back getting control S61 switch on
3	Adjust the menu C-Diagnosis/ Inspection-session, C44 speed in the processor DAVID-613. In this menu are spend the speed of the car and the number of revolutions of the drive.
4	The car move upward with the releeling control. If the car comes to short time to a halt, evidently at the speed of 0 m/s but the number of revolutions of the drive larger 0 rpm is waived the driving ability and the examination successfullly terminates. If the speed does not drop to 0 m/s the driving ability is too high.
5	The car with the releeling control upwards from the upper emergency limit awitch move.
6	The releveing control S61 switch off. The control returns to normal operation.

4.5 Brake test

In the **submenu C45 break test** the processor system DAVID-2005-613 is possible during switched resent control the short-circuit protection and the monitoring function $V < 0,2$ m/s to deactivate. Security the monitoring function becomes $V > V_{nenn}$ activates which bracked with exceeding of the nominal speed terminated(both brake coils become without tension).

	Attention!
	The following activities may be accomplished only by authorized technical personal. Thus all irregulaties and disturbances can when assembling and with operated a lift to be recognized and repaired. Regardless of the safety regulation specified in this guidance in the user country valid laws regulations are to keep guidelines and standarts.
1	The car must be at least two floors below the highest stop
2	Please pay attention of the empty car. You scolded the resend control S61 and drive the cab outside of the door zone. The doors remain closed.
3	Adjust the menu C-Diagnosis/Inspector-session, C45 brake test . By this parameter that becomes short contactor power down in the frequency inverter of the series Goliath-60. The monitoring function is waived (those the brake opening at a speed of more largely 0,2 m/s prevented).
4	Give an car call with the HPG-60 or press at the central unit the calling button for the lowest stop place.
5	After the car has started moving you must activate the break-test key button S82 by a rotation to the right. Press the brake opening racer S 82A. Now the brake is opened permanently.
6	Operate now the brake opening tracer S81A. The security circle interrupted the brake coil A is still under tension and remains open, but the brake coil B drops.
7	The brake coil B which can be examined closes, rake coil A is still unter tension. The minimum delay value for a brake circuit amounts to 0.4 m/s ² , and/or the maximum stopping distance with $V_{nenn} = 1.0$ m/s amounts to 1,8 m and/or with $V_{nenn} = 1.0$ m/s of 3,5m!
8	Test procedure for the second brake circuit repeat!
9	After successful braking code switch S82 braked switches off and keys off takes.

4.6 Execution of the Remote Trigger Car

In the submenu **C46 Remote Trigger Car** of the processor system DAVID-613 is possible to activate the function Remote Trigger Car over the Switch S50 on the operating panel of the controlercabinet in order to switch on the coil of the speedlimiter. After put off the switch S50, the function is switched off.

4.7 Execution of the Reset Remote Trigger Car

In the submenu **C47 Reset Remote Trigger Car** of the processor system DAVID-613 is possible to activate the function ResetRemote Trigger Car over the Switch S50 on the operating panel of the controlercabinet in order to switch on the Reset-coil of the speedlimiter. After put off the switch S50, the function is switched off.

4.8 Execution Remote Trigger Counterweight

In the submenu **C48 Remote Trigger Counterweight** of the processor system DVID-613 is possible to activate the function Remote Trigger Counterweight over the Switch S50 on the operating panel of the controlercabinet in order to switch on the coil of the speedlimiter of the counterweight. After put off the switch S50, the function is switched off.

4.9 Execution Reset Remote Trigger Counterweight

In the submenu **C49 Reset Remote Trigger Counterweight** of the prosector system DAVID-613 is possible to activate the function Reset Remote Trigger Counterweight over the Switch S50 on the operating panel of the controlercabinet in order to switch on the Reset-coil of the speedlimiter of the counterweight. After put off the switch S50, the function is switched off.

4.10 Execution Endswitch Travel Top

In the submenu **C410 Endswitch Travel Top** of the processor system DAVID-613 it is possible to over-drive the highest Levelpoint by switching on the function. The travel ends in the Endswitch Top.

4.11 Execution Endswitch Travel Bottom

The submenu **C411 Endswitch Travel Bottom** of the processor system DAVID-613 it is possible to over-drive the lowest Levelpoint by switching on the function. The travel ends in the Endswitch Bottom.

4.12 Execution Switchcabinet Temperature Test

In submenu C412 switchcabinet temperature test of the processor system DAID-613. You can decrease the temperature limit, in order to produce an error message. It is very important that the switchcabinet temperature function is active in the menu B600 monitoring functions.

4.13 Execution Motor-PTC Test

In the submenu **C413 motor PTC test** of the processor system DAVID-613 it is possible to simulate a motor PTC error for one travel, in order to generate an error in the controllersystem. It is very important that the PTC-function is active in the menu B600 monitoring functions.

4.14 Execution DSK-Pulse-Encoder Test

In the submenu **C414 DSK encoder test** of the processor system DAVID-613 it is possible to switch off the encoder of the shaftcopy for one travel. The shaft copying software technically produce an error response. A condition is natural that in the menu B600 monitoring functions is the DSK monitoring active.

4.15 Execution test Sink-prevention

In the submenu **C415 test Sink Prevention** of the processor system DAVID-613 is possible to activate the function Test Sink Prevention over the Switch S50 on the operating panel of the controlercabinet in order to switch off the coil of the speedlimiter. After put off the switch S50, the function is switched off.

4.17 Functional test –Detection of an unintended car movement EN 81-20:2014-11

	<p>To initiate the journey from the zone, note the following:</p> <ol style="list-style-type: none"> 1.) Stopping the elevator car flush with the bottom landing (top stop) . 2.) Turning the Return Motion Drive -> Close the doors. 3.) Function "UCM-zone drive" in the TÜV Menue-C416 activate 4.) Return Motion Drive UP (DOWN), until the security circuit SIS16-101 interrupt. 5.) Open the shaft door and measure the stopping distance. 6.) Close the shaft door 7.) In the C0 RESET menu error „F60 A3-case“ reset 8.) Cabin with Return Motion Drive downwards (top down) drive. 9.) Return Motion Drive off -> door opens -> normal operation 10.) Repeated process for the top stop on your way down zone -> () note entries!
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General

According to the new standard **EN 81-20: 2014-11** "protection of unintended car movement away from the landing with the landing door not in the locked position and the car door not in the closed position" the car must leave the door zone and must come to a halt within the legal stopping distance.
 As a worst-case scenario here, the "Motor-driven exit" door opener in the zone with acceleration values of the normal operation is considered.

Basically, the simulation of the process never done with an open door!

To facilitate this, a separation in the control terminal, is available a Relay "K69", the safety circuit of the door lock of SIS16-101 / feedforward separates drive contactors in the simulation case. In order to allow the elevator to the start of the journey, is a software function in TÜV menu of the control computer of the series D613, D912 and D2005 activates the security circuit for a drive, so that the drive and braking elements contactors are energized until they leave the zone. After leaving the zone, the drive is disconnected and so the car comes to a stop. You can now open the landing door with the emergency release and determine the stopping distance, based on the hatch door to the cabin doorway clamp.

Experation

The elevator car is parked in the lowest landing floor and turned on the Return Motion Drive. This will be the landing and car door closed and a Call input over indoor and outdoor control is suppressed.
 Please listen in with the local intercom in the cabin, if there are people in it. You can take the handheld terminal HPG-60 in the control computer to the TÜV menu 416th UCM-zone drive. The UCM-zone drive is set to ON. Now you can start with the Return Motion Drive Switch UP holt the drive, which ends when you leave the zone. Automatically increase the speed to rated speed and the acceleration was increased to 100% (in conjunction with GOLIATH inverter).
 The stopping distance is displayed in mm on the display. The system is locked with the error "F60 A3-case". Optionally, you can open the Landing door chess with the emergency release and measure the stopping distance (Chess doorway to the cabin door threshold).
 After re-closing the landing door and turning off the safety circuit fuse F7. Before switching on the safety fuse F7 in the circuit, **C0 RESET menu** must be reset the A3 error then you can drive with the Return Motion Drive Switch DOWN, the elevator car in the lowest station.

Repetition

The same process must now be repeated for the top stop. Therefore, the elevator car at the top station is placed flush with the zone and performs way down.