Minimanual for Control Unit with *S3*

The manual describes the most common questions; for other problems/questions, see Reference Manual *S3_UM_Bx_GB*

Contents:

1 Before switching on, check that the unit is designed for the right type of mains.

If the unit is made for the 5-conductor (TN-S) system and you have a 4-conductor (TN-C) system, do not forget to bridge neutral and ground!!

2 How does the keypad work on the computer?

The left-hand part "Cross" is intended for fault search and computer programming.

Esc:	Exit menu, clear changes.
Arrow down, 0:	Move down in menu, reduce value of parameter etc.
	Enter password (0).
Arrow left, 1, ?:	Move left in the edit field. If there is Help for a menu choice, this is shown by "?" in the left-hand edge of the line - press "?" to get help.
	Enter password (1).
Arrow right, 2:	Move right in the edit field. Function lock (only if main password locked).
	Enter password (2).
Arrow up, 3:	Move up in menu, increase value of parameter etc.
	Enter password (3)
Enter:	OK/Confirm.

Right-hand part "Line"

Landings:	Switch landing calls off and on, green LED indicates that the buttons are on.
Maintenance:	Switch maintenance running off and on from the computer, red LED indicates that service running is on. NB! When running from the computer, there is no "real" fail-save device as the buttons on the computer have no safety function.
Up:	In normal running:
	Short press raises the lift one floor
	Long press takes lift to top floor (computer acknowledges a long press with a beep)
	In inspection running:
	Raises lift while button is pressed.
Down:	In normal running:
	Short press lowers lift one floor
	Long press lowers lift to ground floor (the computer acknowledges a long press with a beep)
	In inspection running:
	Lowers lift while the button is pressed.

3 Backup C?

A fault is shown if the back-up capacitor has discharged. The back-up capacitor supplies power to the statistics memory when the lift is disconnected. A fault is shown as information that the statistics in the memory before the lift was shut down may be faulty. This is a normal fault if the computer has been without power for extended time.

4 Phase error?

The computer has an integral phase monitor. The computer checks the phase sequence, voltage and angle between phases. If a phase fault, check that all phases are connected in the correct order (change order) and for 3x400VAC check that neutral is connected to the computer/unit. If you cannot find any phase order fault, you can change the percentage by which the phases are permitted to deviate.

The measurement value is given in the menu:

Debugging\Status

The computer shows 100% fault if any phase is missing or if the order is incorrect; if the phases are correct it shows around 0-2 % fault.

To change limit values for the phase monitor:

\Parameters\Protection\Phasedet

5 Set the motor protection

Set the motor protection (FH); this is not done by us.

6   What is required for inspection running?

To get access to the lift for inspection, the safety circuit must be intact and the thermistor on the motor connected. If the limit switches are not connected (LD, LU terminal 60 and 61) they must be bridged to 24V (Note, only if the contacts are Normally Closed).You can then run between terminal 24V and 201 for down and 202 for up.
If inspection is active on the car roof (input 1I11 is not active) the pushbuttons for up and down on S3-computer are disabled.

To check which conditions are required for start, the computer shows this in menu

\Debugging\Start conditions\Maintenance

To access the menu from the main menu:
          go to Debugging with arrow down/up, press enter
          go to Start conditions with arrow down/up, press enter
          go to Maintenance with arrow up/down, press enter

You now see a list of conditions which are not fulfilled.

List of fault types

Direction missing	Lift has no direction
Lift program not loaded	Lift program did not start when the computer started because of a parameter fault or because <ESC> was pressed during power up
+24V < 16V	No 24VAC supply to the S3-computer, voltage below 16V
+24 Fused <16V	Short circuit or overload on the 24VCD supply, voltage below 16V
Phase monitor	Phase monitor tripped, see measurement values in \Debugging\Status
Fault status	A fault has occurred which requires resetting, see \Debugging\History
EF1	Input from external fault input 1 not OK (Input signal EF1, normally connected to T1)
EF2	Input from external fault input 2 not OK (Input signal EF2, normally connected to T2)
EF3	Input from external fault input 3 not OK (Input signal EF3, normally connected to T3)

LD/LU active	Limit switch up and down active simultaneously, i.e. computer gets signal that the lift is at the top and bottom floors simultaneously (Input signals LD, LU, normally connected to P3, P4).
CC active	Main contactors activated (Input signal CC, normally connected to 1I12)
Insp. active	Inspection run
Inspection S3	Inspection active on S3
Inspection roof	Inspection active on car roof (Input signal MT Maintenance, normally connected to 1I11)
Landing calls off	Landing calls are disabled by input or the pushbutton "Landings" on the S3-computer
Car emergency stop	Lift blocked for landing calls as safety circuit broken, reset with car calls or by open the door
In travel	Lift in motion
Min stop time	Minimum stop time between start and stop
Overload	Overload contact active (Input signal OL1, normally connected to 1I13)
Fulload	Fulload contact active (Input signal FL)
Hidden door	Hidden door inputs are not equal to door circuits (Input signals ED, MC, DC)
Safety circuit	Safety circuit broken
Stop time	Stop time for car calls or landing calls
Zone system	Zone system relays for bridging safety circuit are not activated
Door open	Door open
Door closed	Door closed
Start time	Start time for reset

7 Positioning system

Fit flags/magnets and limit switches according to drawing.
If a encoder is used, see 11

8 Low speed fault?

When the lift begins to slowdown to a floor, there is max time for how long it will travel before it reaches the floor.
If this time expires the lift will stop and the fault "Low speed" will be displayed. Default setting is 6.0s

If it needs adjusting, go to: \Parameters\Protection\Traveltime\522 Time low speed

9 What to do when the installation is ready?

Set date and time by going to menu:
 \Preferences\Clock yymmdd hh:mm:ss
Clear fault and statistics in menu:
 \Debugging\History\Clear\
Run time, total travel time + 10.0s:
 \Parameters\Protection\Travel time\521 Time normal
To change door open time:
 \Parameters\Level. Doors\Side A (B)\681 Time 1 (691 Time 1)

If a encoder is used for positioning, write down the floor positioning parameters (parameter 153-163 and 200-231).
If this information is stored the floor setup procedure is not necessary in case the S3-computer needs to be replaced.

10 Reset (Password) reduced headroom/pit

Some fault situations in the S3-computer needs to be deactivated by doing a Reset in the Main menu (power on/off have no effect).In that case a password is required, **112233**
It is possible to change the password under Password/Safety.
From software MP2.2.39, if the fault "Safetyc./LPH" is shown, it is not possible to do a Reset on the S3-computer if an input is programmed for external Reset (RST).
Also all conditions according to EN81-21 must be met (safetycircuit intact and <u>not</u> on maintenance/inspection).

Encoder positioning, from software version MP2.2.17

Tips: If the floor position is pre-programmed (check parameter 200-231) you can skip step 3 –10.
All values can be entered and changed manually directly to parameters 153-163 and 200-231.
All values are millimetres.
To see the position in the S3-computer go to *Debugging/Floor count*. The value inside brackets are
the position of the car compared to the nearest floor, + above and – below.

Work process:

1. Preparation
If the lift is fitted with frequency inverter, program this and run auto tuning.
Mount limit switches and the encoder.
Check that the encoder direction matches the lift direction (*/Tools/Show direction*).If not switch A and B
channel from the encoder.
2. Activate
Activate functions to store floor positions, set *Tools/Encoder/Active* to YES.
Important- When the function is activated, limit switches are disabled in the upper and lower position i.e. you
can run the lift on main limit/buffer. Only applies to inspection drive on the S3-computer and inside
the car, not inspection on car roof.
Low speed time is tuned off for easier setting of any frequency inverter.
The lift starts at slow speed within two seconds for easier setting of the floor (not for all
applications).
3. Settings
Enter lift speed under *Tools/Preferences*.
If the lift has no medium speed, set to 0.0m/s.
Run calculate under *Tools/Preferences/Calculate*
The S3-computer calculates where the synchronisation path/curve (LD) shall be placed in relation to the
lowest floor. Mount the limit down (LD) path/curve according to this value.

4. Reset the S3-computer, turn off inspection/maintenance and let the lift go down to the first floor.

5. If the lift requires a different slowdown distance, move the limit down (LD) and change parameter 154 equal
to the change. If changes are made do a reset of the S3-computer.

6. Turn on inspection (maintenance on S3-computer, normal on car roof).

7. Use car calls 1 (down) and 2 (up) to move the lift to the first floor, hold the stop/door open button and press
the car call for floor 1, this action stores the position for floor 1 in the computer (parameter 200), when
continue with the same procedure for the remaining floors.
When a position is stored, the system confirms this by lighting up the car call for that floor for 2 seconds and
the computer gives an audible signal.
Note: It is not possible to store a position that has negative (-) value. That could happen on the first floor if
the relations between limit down (LD) and parameter 154 are wrong. To be sure check the position when the
lift is at floor 1 under *Debugging/Floorcount.*If a negative value increase parameter 154.

8. Reset the S3-computer, turn off inspection/maintenance.

9. In menu *Tools/Encoder/* press enter on *Stop adjust*, the S3-computer now drives the lift to every floor up and
down to adjust for differences in stop behavior.When finished, the value of the stop distances is calculated
and changed, parameter 157 and 158.
Note: Make sure that the slowdown distance is adequate otherwise the value on 157-158 will be very wrong!
A value of 20 or more would indicate that the lift is going to fast in to the floor.

Fault messages:

Zonerelay fail
The safety relays for relevelling/early door opening has failed.
If the fault remains after a reset or power on/off the S3-computer needs to be replaced.
The lift is disabled for normal travel.

Break in zone
The signal from the Zone photocell/magnet has been lost from input Z1 then the lift is inside the floor zone.
Relevelling/early door opening will be disabled.

Normal TT
Normal travel time has expired (P521), requires a reset of the S3-computer.
The time starts then the contactor control (CC) input is activated and stops then it is deactivated
The lift is disabled for normal travel.

Leveling
Normal travel time has expired during relevelling, requires a reset of the S3-computer.
The lift is disabled for normal travel.

Safetyc./LPH
A break in the safetycircuit before input "ML" (usually programmed on S2).
Requires a reset of the S3-computer.
The lift is disabled for normal travel.

Contactor
The contactor control (CC) input is active after the lift has stopped.

Pawldevice
The pawl device is in the wrong position, the control input PD1/2 is active at floor position.

FC error 1-6
Photocell/lightcurtin test has failed during start

Positioning
The limit switches LD/LU have been activated in the wrong direction or signal has been lost during travel.

Lowspeed
The low speed time has expired (P522).
The time starts then lift starts to slowdown to stop at a landing.

Lowspeed in zone
Same as above but the lift has reached the floor zone then the time expired.

Movement sup.1 – 3
Movement supervision, only active if one or more inputs are programmed to MVS1-3 (special function).
The lift is disabled for normal travel.

Brake failure
The brake monitoring contacts are not in the right position during start, only active if one or more inputs are programmed to BRS1-4.
Requires a reset of the S3-computer.
The lift is disabled for normal travel.

Ext. unit
External unit A or B, the control inputs programmed to EUA1, EUA2, EUB1 or EUB2 is not in the right state (active or not active depending
on how they are used).

Speedgovernor
Overspeed governor, only activated if an input is programmed to SG.

Start seq. error
The lift has not moved from the floor zone after 10 seconds of driving.

Phasedetector
The 3-phase (230V/400V) supply has failed (P530-533), one or more phases are missing or in the wrong order.

+24V<16V
The 19VAC supply to the S3-computer is missing, terminal P1.

+24V FUSED<16V
Short circuit or overload on the 24VDC supply.
The S3-computer will automatically restore the 24VDC supply as soon as the short circuit or overload is removed.

Ext. fault 1
An input programmed to EF1 will cause this fault, normally motor temperature.

Ext. fault 2
An input programmed to EF2 will cause this fault, normally brake resistor temperature.

Ext. fault 3
An input programmed to EF3 will cause this fault, normally the fault contact on frequency inverters.

Ext. fault 4
GMV NGV fault. The lift is disabled for normal travel. Requires a reset of the S3-computer.

Temp. cabinet
The temperature inside the controller cabinet is too high (P540-541).
The lift is disabled for normal travel.

Door floor xx
The landing door has not closed on a specific floor, safetycircuit input DC is not active before the closing time (P685, 695, 704) expires.

Start floor xx
The main contactors have not closed before the contactor control time expires (P510).
Usually a break in the safetycircuit after any of the S3-computers control inputs.

Break MP
A break in the safetycircuit before the input programmed to MP during travel.

Break ML
A break in the safetycircuit before the input programmed to ML during travel.

Break ES
A break in the safetycircuit before the input programmed to ES during travel.

Break MC
A break in the safetycircuit before the input programmed to MC during travel.

Break DC
A break in the safetycircuit before the input programmed to DC during travel.

Break EC
A break in the safetycircuit before the input programmed to EC during travel.

Break CC
The input for the contactor control CC has been deactivated during travel, i.e. the main contactors has opened.

Pgm fail (COP)
Pgm fail (CMF)
Pgm fail (EXE)
Pgm fail (MCCOP)
System faults, hardware or software.
If the fault remains after a reset or power on/off the S3-computer needs to be replaced.
The lift is disabled for normal travel.

Start conditions:

Liftpgm not running
The lift program is not running, ESC was pressed during power on or there is a software fault.
If the fault remains after a reset or power on/off the S3-computer needs to be replaced.

+24V <16V
The 19VAC supply to the S3-computer is missing, terminal P1.

+24V FUSED<16V
Short circuit or overload on the 24VDC supply.
The S3-computer will automatically restore the 24VDC supply as soon as the short circuit or overload is removed.

Phasedetector
The 3-phase (230V/400V) supply has failed (P530-533), one or more phases are missing or in the wrong order.

Errorstatus
A fault has occurred that requires a reset of the S3-computer, e.g. brake on safetycircuit input ML or normal travel time has expired.

Ext. fault 1
An input programmed to EF1 will cause this fault, normally motor temperature.

Ext. fault 2
An input programmed to EF2 will cause this fault, normally brake resistor temperature.

Ext. fault 3
An input programmed to EF3 will cause this fault, normally the fault contact on frequency inverters.

LD/LU activated
Inputs P3 and P4 (limit switch down/up) are activated at the same time, i.e. the S3-computer receives a signal that the lift is at the top floor and the bottom floor at the same time.

Car emerg. stop
A break in the stop series (safetycircuit) before input programmed to EC, landing calls are disabled, reset by pressing car call.

Emergency stop
A break in the emergency stop button series (safetycircuit) before input programmed to ES, reset by pressing car or landing call.

CC activated
The contactor control input is active, i.e. the main contactors are closed.

Maint. Active
Maintenance active on car roof or S3-computer.

Maintenance roof
Maintenance active on car roof.

In travel
The lift is running.

Direction missing
The lift has no direction, i.e. it has not received car or landing call.

Min. stop time
A time it has to wait before it can start again.

Overload
Input programmed to OL1-4 is active.

Fulload
Input programmed to FL is active, landing calls are disabled.

Safety circuit
One or more inputs for the safetycircuit is not active.

Landings off
The landing calls are disabled, by an input or by the push button on the S3-computer.

Out of zone
The safety relays for relevelling/early door opening are not activated.

Brake active
One or more inputs programmed to BRS1-4 (brake monitoring) are not in the right state.

Up/down active
Up and down inputs for maintenance drive is activated at the same time.

Ext 1
External unit A, the control inputs programmed to EUA1, EUA2 is not in the right state (active or not active depending
on how they are used).

Ext 2
External unit B, the control inputs programmed to EUB1, EUB2 is not in the right state (active or not active depending
on how they are used).