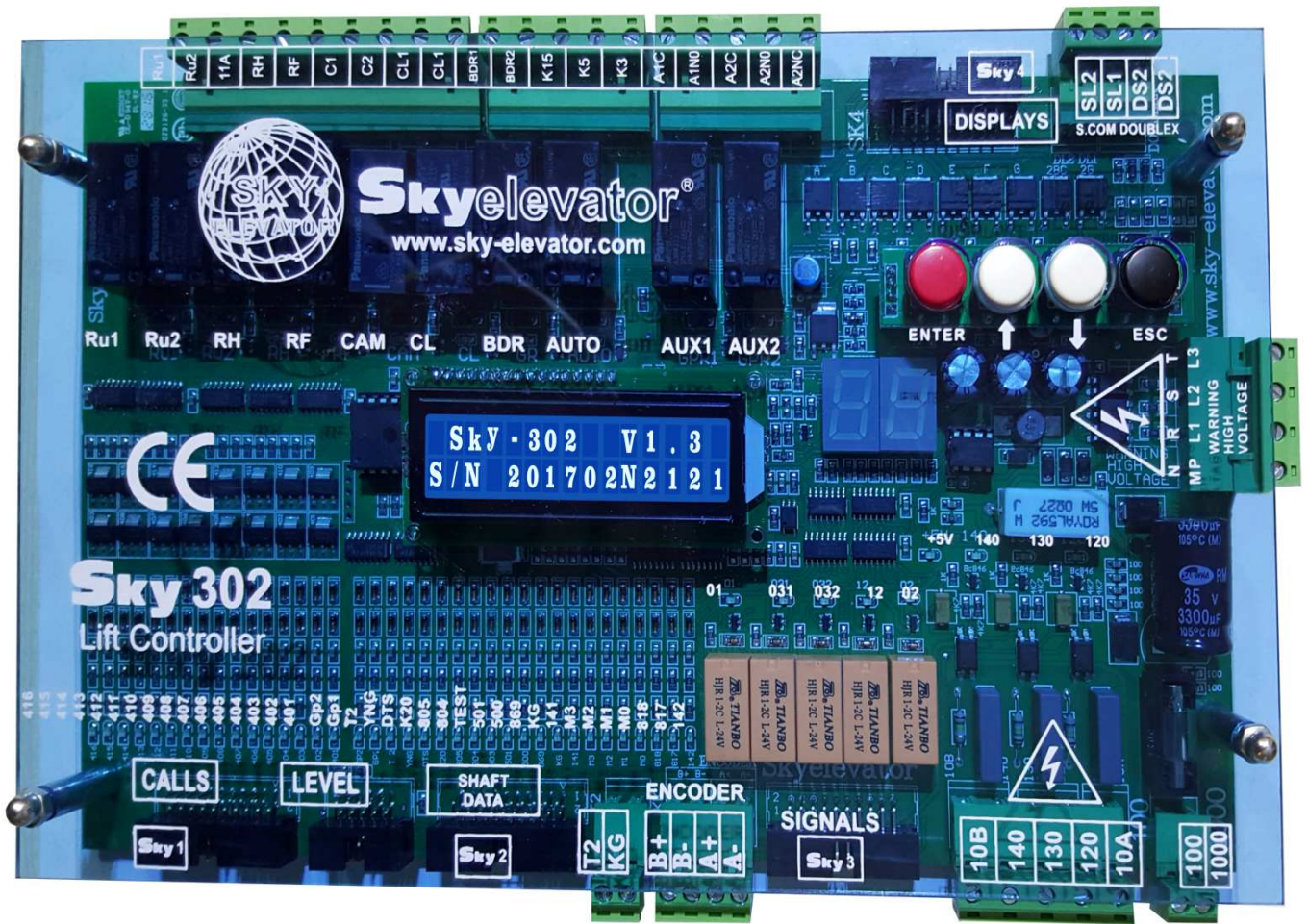




Sky
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Sky-302

MAIN CONTROL BOARD

USER MANUAL

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WARNINGS

CAUTION!

WHEN THE LFIT OPERATES NORMALLY, 817 AND 818 BISTABIL SWITCHES MUST NOT BE SHORTED WITH THE '100' CONNECTOR.

CAUTION!

THE SECURITY PARAMETERS (120 STOP - 130 DOOR – 140 LOCK) MUST NOT BE SHORTENED.

CAUTION!

BE SURE THAT ALL SECURITY CONTACTS OPERATE PROPERLY BEFORE PERFORM NORMAL OPERATION MODE.

CONTROL AND CLEANING

- ☞ Does not require periodic control.
- ☞ In case of a problem sent the card to the producer firm for control and fix.
- ☞ Do not connect to the liquid materials
- ☞ If needed, clean with pressured air.

SKY 302 ELECTRICAL SPECIFICATIONS

THIS DOCUMENT IS A SAMPLE FOR APPLICATION. ALL INFORMATIONS CONTAINED IN THIS DOCUMENT ARE SUBJECT TO CHANGE BY SKY ELEVATOR WITHOUT NOTICE. SKY ELEVATOR ASSUMES NO RESPONSIBILITY FOR ANY DAMAGE, LIABILITY OR OTHER LOSS ARISING FROM THESE INACCURACIES OR ERRORS.

OPERATION TEMPERATURE	0°C -- 60 °C
PROTECTION CLASS	IP20
MOISTURE	<%95
PHASE CONTROL	220 - 380V, 50/60 Hz, N
CONTROL SUPPLY VOLTAGE	24 ± 5V DC
POWER CONSUMPTION	MAX. 300 mA 8W, 24V DC
SECURITY CIRCUIT VOLTAGE	MAX. 230V AC
CONTROL SIGNAL INPUT	24 ± 5V DC
CONTROL SIGNAL INPUT WITH SHORT CIRCUIT PROTECTION	24 ± 5V DC
MANUFACTURER	SKY ELEVATOR
	www.skyelevator.de - E-mail: sky@skyelevator.de www.sky-elevator.it - E-mail: sky@sky-elevator.it www.sky-elevator.bg - E-mail: sky@sky-elevator.bg www.sky-elevator.com - E-mail: sky@sky-elevator.com

SKY 302 TECHNICAL SPECIFICATIONS

- **Simple , mixed and full collective**
- **Adjustable stop numbers upper to 16 stops and memory in power off mode**
- **Phase control system with fix the wrong phase automatically**
- **Support a UPS system and full control on power off mode**
- **Support a floor level status**
- **Simplex , group connection**
- **Parameters can easily adjust with program buttons and LCD screen**
- **Overload function**
- **Full load function**
- **Minimum load function**
- **Heading towards to first predetermined floor in fire case**
- **Adjustable parking station and travelling time**
- **Full short circuit protected log (call) inputs (overheating, overcurrent, overvoltage protected)**
- **To all log (call) outputs 1A lamp can be directly connected**
- **Adjustable display output according to the intended code for each stop**
- **When the doors open for a long time, giving 'out of service' signal to outside buttons**
- **Choosing open/close waiting position of all or each floor for full automatic doors (According to EN 81-1/2 standard, 'closed waiting' must be chosen.)**
- **Adjustable 'waiting on the floor', 'lock waiting', 'busy time'; 'automatic door on/off' positions, 'max. high speed', 'max. low speed' times**
- **Automatic door card is placed on the main board; no need to use another board**
- **Operating in revision mode chosen by program buttons**
- **Adjustable time-delay relay for speed controlled lift**
- **Programmable auxiliary relay**
- **Programmable auxiliary input**
- **Programmable position reset**
- **When one of the log (call) buttons hang up, the car waits for 1 min. on this floor, then cancels this floor and continue its normal operation until the short circuit will be eliminated. Meanwhile a warning will be displayed on the LCD screen.**
- **Overheating, overcurrent, overvoltage protected display and log (call) outputs**

EXPLANATION OF TERMINALS

R, S, T	_____	System Main Phases (Phase Control Built-In Card)
MP (N)	_____	Neutral
U, V, W	_____	Fast Motor Outputs
U1, V1, W1	_____	Slow Motor Outputs
10A	_____	Security Circuit Neutral
11A	_____	Security Circuit 140 Turning (Contactor Coil Voltage)
110	_____	Security Circuit Supply
120	_____	Security Circuit Stop Turns
130	_____	Security Circuit Door Turns
140	_____	Security Circuit Lock Turns
1F	_____	Phase (direct connected to the one of the system main phases)
1	_____	Car Socket Voltage (220V AC)
2	_____	Car Lamp (220V AC)
810 & 2001	_____	Pump
840 & 2000	_____	Brake
401 – 416	_____	Car Call Button Inputs And Lamps (common 100)
142	_____	Level Stopper Magnet MKD (common 100)
817	_____	Lower-Level Stopper Magnet (common 100)
818	_____	Top-Level Stopper Magnet (common 100)
803 / 141	_____	Monostable Counter MKU (141)
804	_____	Overload Contact (common 100)
805	_____	Full load Contact (common 100)
KK	_____	Contactor Feedback (common 100)
869	_____	Revision Switch Input (common 100)
500	_____	Revision Down Input (common 100)
501	_____	Revision Up Input (common 100)
M1	_____	Magnet Switch for Floor Selection (common 100)
K20	_____	Automatic Door Open Button (common 100)
DTS	_____	Automatic Door Close Button (common 100)
12	_____	Busy Indicator (common SCOM connector)
31	_____	Down Indicator (common SCOM connector)
32	_____	Up Indicator (common SCOM connector)
a.b.c.d.e.f.g.2g	_____	Digital Display Outputs 24V DC (common100)
GP1	_____	UPS contactor terminal
24	_____	Digital Common
100	_____	(+) 24V DC
1000	_____	(-) 24V DC
190	_____	Simple Control Common
K3	_____	Automated Door Close Signal (common K15)
K5	_____	Automated Door Open Signal (common K15)
K15	_____	Common Input For K3 - K5
AU	_____	Auxiliary Relay Contact
AU	_____	Auxiliary Relay Contact

SKY 302 PARAMETER SETTINGS

1. Press the '*enter*' button to enter the parameter settings menu,
2. Press '*up*' or '*down*' buttons in order to find the desired setting,
3. Press '*enter*' button to change the value of the desired parameter, the chosen parameter is going to be blink, set the parameter to desired value by using '*up*' and '*down*' buttons (if you don't want to store the value in memory press '*escape*' button),
4. After setting the parameter value, press '*enter*' button to memorize it, then it passes the next parameter.
5. Press '*escape*' button to exit from parameter settings menu.

☞ EXAMPLE: Setting the stop number

- Press '*enter*' button to enter the parameter setting menu,
- Press '*up*' button until find '*stop*' parameter
- Press '*enter*' button again, stop number will blink,
- Choose the stop number using the '*up*' and '*down*' buttons
- Press '*enter*' button to memorize the value and pass the next parameter setting.

SKY 302 PARAMETER LIST

PARAMETER LIST

PARAMETER	SETTING LIMITS	FACTORY VALUE	EXAMPLE
Program Settings 1-Get Inspection	-	-	Be operated at inspection mode on card UP / DOWN
Program Settings 2-Stops Number	1 -- 16	16	Adjustable stop number
3-Collective Type	1- mix. collection 2- down coll. 3- up coll.	1-simple collection	-
4-Door Type	1-not automatic 2-semi automatic 3-full automatic	1-not automatic	-
5-SHAFT COM.TYP	1- paral . data 2- serial . data	1- paral . data	-
6-Shaft Reading T	1-2mono stable 2-M1 bi stable 3-M1 mono stable	2- M1 bi stable	-
Program Settings 7- Fire Floor	1 – 16	17	Choose '17' to cancel fire
Program Settings 8- Working Tim	000-100	0	-
9-Set KSR Mode	1-Go on KSR 2-Stop on KSR	1-Go on KSR	-
10-Disp.Out Type	1- Disp. sev. seg. 2- Disp. Binery 3- Disp Flr.Out	1- Disp. sev. seg.	-
11-Working Type	1. Double Speed 2. Fuji Inverter 3. Yaskawa Inv. 4. Lg Inv.	1. Double Speed	-
12-Position Reset	1- Reset. Active 2 -Reset. Passive	2 -Reset. Passive	Reset operation after power cut
13-Lift Type	1-Lift Simplex 2 -Doublex A 3- Doublex B	1-Lift Simplex	Lift Running Mode
14-Door Pre-Open.	1-Passive 2-Active	1-Passive	-

PARAMETER	SETTING LIMITS	FACTORY VALUE	EXAMPLE
Time Setting 15-Flr Wait	001-100	003	Time to wait before the movement
Time Settings 16-Fst Speed	001-100	010	-
Time Settings 17-Slw Speed	001-100	015	-
Time Settings 18-Busy Time	001-100	015	Time to wait before the next record
Time Settings 19-Cls Door	001-100	005	Limit of door closing time
Time Settings 20-Opn Door	001-100	005	Limit of door opening time
Time Settings 21-Ups Resc.	1-000 2-001	000	Ups mode 001 is active
Time Setting 22-Lock Waiting	1 – 15 s	8 s	After pump pull, lock will wait up to the chosen value
Time Setting 23-Brk Wait	0 – 15 s	0 s	Time of brake run after the floor arriving
Time Setting 24-Ups Strt	0 – 15 s	6 s	Time of ups run after the Power outages
Time Setting 25-Ups Work	001-300 s	120 s	Limit of ups mode
Time Setting 26-Level Tim	01-50 s	010 s	Limit of level mode
Program Settings 27-Display Settings	00,01,02,03,04,05,06 07,08,09,10,11,12,13 14,15,a,b,c,d,-1,-2,-3	00,01,02, 03,04,05,06 07,08,09,10,11,1 2,13 14,15	Floor information shown on the display

PARAMETER	SETTING LIMITS	FACTORY VALUE	EXAMPLE
Program Settings 28-Floor Settings	FLR . 01 – 16 -cls.wait -open wait	this parameter must be chosen 'wait closed' for capability to the 'EN 81-1/2 standard'	Chosen open/close state for automatic doors (must be set separately at the floors)
Program Settings 29-Default Settings	-time settings -display settings -spec. floor settings -general settings -total settings	-	-
Program Settings 30-Auxiliary Input Sel.	(EMP, T2, 142, 817 , 818 , M0 , M1 , M2 , M3 , KG , 869 , 500 , 501 , 804 , DTS, K20)	-	If there occurs a problem in any inputs on the card due to any reason; the 'GP1' connector can be set in the place of failed input and after doing the necessary settings in the parameters menu, card will continue its normal operation
Program Settings 31-Auxiliary Output Sel.	(BOS, RU1, RU2, RH, RF, LIR, KLR, AUT 031, 032, 12, 02)	-	if there occurs a problem in any relays on the card due to any reason; the 'YED1 and 'YED2' connectors can be set in the place of failed relay and after doing the necessary settings in the parameters menu, card will continue its normal operation
Program Settings 32-Phases Prot.	1- Protect Pass. 2- Protect Active.	1	Phase Control Mode.
Program Settings 33-Phases Seq.	1- Protect Pass. 2- Protect Active. 3- Protect FIX.	3- Protect FIX.	Phase Sequence Mode. 1-With out fix If Phase Wrong. 2- VVVF device Fix.(vvvf) 3- With fix Phase (two speed).
Program Settings 34-Level Set.	1-Level. Passive 2-Level. Active	1	Level Mode.

AUXILIARY INPUT AND OUTPUT SETTINGS

There are;

- 1 auxiliary input
- 1 auxiliary output (relay), existing on the board for general purpose.

Auxiliary Input (GP1):

If there occurs a problem in one of the inputs on the card (T2, 142, 817, 818, M1, KG, 869, 500, 501, 803, 804, 805, K20, DTS) as a result of any reason such as short circuiting or wrong wiring... change the parameter input with the auxiliary input (GP1) without moving the card out of the panel. After this change the card will continue its normal operation.

☞ **EXAMPLE:** If the '142' input failed:

- Put off the wire of the '142' connector on the card and put the same wire on 'GP1' connector.
- Enter the parameter settings menu and come to the 'aux. input sel' parameter,
- Press 'enter' button, set the 'aux. input' value as '142' by using the 'up' button. Press 'enter' button to store last change in the memory. After this setting the 'GP1' input will operate as '142' input.
- **This process can be applied to the all inputs on the card**

Auxiliary Output (YED):

If there occurs a problem with one of the relays on the card (RU1, RU2, RH, RF, LIR, KLR, AUTO, 031, 032, 01, 02, 12) this auxiliary input can be used instead of the broken relay.

☞ **EXAMPLE:** If 'LIR' relay is failed;

- Change the wire of 'P1' connector with the one of the 'AU' connector, and the wire of 'P2' connector to the other 'AU' connector,
- In the parameter settings mode, find the 'aux. output sel.' parameter and press 'enter' button,
- Choose 'auxiliary output' as 'LIR' by using 'up' button and memorize it by pressing 'enter' button,
- **This process can be applied to the all relay outputs on the card.**

Usage Tips

In order to be exact convenience of the lift system to the EN 81-1/2 standards as electrically, the control card, control panel, security circuit and electrical connections must be convenient to concerned standards. The producers whom willing to build panel with SKY 302 must have enough level of information and experience about EN 81-1/2 standard and other standards, regulations, and instructions. SKY ELEVATOR assumes no responsibility for panels not build towards the given directions. SKY ELEVATOR guarantees that SKY 302 is convenience to the EN 81-1/2 but inside and outside connections of the control panel and other electrical connections are under responsibility of mounter.

- ☞ There must be 10mm distance between the SKY 302 control card and the panel.
- ☞ The SKY 302 control card must be fixed from 4 holes at the edges.
- ☞ After the puncturing to place SKY 302 card and other components in the panel, the panel must be cleaned very carefully from iron pieces and conductor wires otherwise these pieces can be cause damage while transferring the panel from somewhere to another.
- ☞ The contactors that are used for the AC motor lifts must be chosen according to the EN60947 AC3 class and must be enduring for the motor power. The connection must be done according to the directions shown in the SKY 302 schema.
- ☞ The cooperative motor placed on the main contactors must be chosen according to the EN60947 and must be controlled that contactors are active/inactive in the same time with power contacts.
- ☞ The bridge diode connections of the brake and pump must be done according to the schema and must be used isolated lugs.
- ☞ Panel manufacturer must control all the connections and do the required tests after finishing the panel.

- ☞ The connections between the control panel and motor; car and lift shaft must be done carefully according to the SKY 302 schema.
- ☞ The 3-phase supply voltage must be connected to the R, S, T connectors on the panel with suitable fuse (chosen due to motor power) and network neutral must be connected to the MP connector.
- ☞ Grounding cables and neutral must be separately connected and the panel body must be perfectly grounded.
- ☞ All stopper linkages specified in EN 81-1/2 standards must be placed in lift and the connections of these linkages must be done to the control panel according to the SKY 302 schema. All the used contactors must be convenient to the EN 60947 standards.

USAGE TIPS IN CONTROL PANEL

- ☞ Be sure that the connections between the control panel and lift system are done according to the SKY 302 schema.
- ☞ Control if there is any short circuit in the connections with a suitable measuring device.
- ☞ Take the '*control panel revision switch*' to 'ON' position.
- ☞ Take the '*motor protection circuit stopper*' to 'ON' position and turn on the panel electric.
- ☞ Control that the led of '02' on the board and 'out of service' lamp on the floor buttons are light up.
- ☞ Control that the voltage between the 100 – 1000 connectors is 20-26V DC.
- ☞ Be sure that all security contacts are connected according to the schema and operates correctly. Control the security inputs activity from 120, 130, 140 leds.
- ☞ The revision switch on the control panel is in ON position so the car will operate only at low speed. Control that the low speed coil is correctly coiled by routing the car with the *up* and *down* buttons placed on the control panel. If the car goes to wrong direction change place of any two ends (U2, V2, W2) of low speed coil on the control panel.
- ☞ Measure the voltage between 2001 – 810 and 2000 – 840 connectors while car is in motion. The value must be in 180 – 240V DC interval.
- ☞ Place the car on one of the middle floors and take the '*car top revisions switch*' to 'OFF' position. The 'Out of Service' indicators will turn off on the floor buttons
- ☞ Be sure that the lift going the true direction by giving log (call)s if it operated wrong change place of any two connections (U2, V2, W2).

RISK ANALIZE

The contactor connector (11A) on the SKY 302 card must be connected to the security system turning.

Panel direction and motion connectors do *not* be closed by hand. In such case security circuits can *not* block motion of the lift.

The 24V AC fuse on the card must not be shunted. If the fuse blows constantly look for a short circuit at the shaft system and inside the panel.

Car lamp supply voltage (1F) must be connected to the one of the main phases before thermic relay.

When motor calefacted, the motor thermistor ends must be connected to the 'T2' connector to avoid the car stay between the floors.

Door frames must be connected to the grounding bar. If grounding is not proper, security circuits have a risk of shunted through door chassis.

After long time operations, dust, dirt, oil can be affect the performance of the security system. Please do not ignore plug and lock functions in periodic controls.



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