

# HEDEFSAN

**HD BE**

USER GUIDE

"Inspiring Technology"



## PERMANENT ERRORS & SOLUTIONS

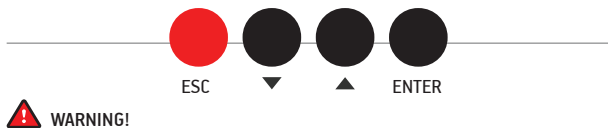
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INVERSE MOVEMENT	1
INVERSE DIRECTION MOTION	2
ML SHORT CIRCUIT	3
BRIDGING ERROR	4
REG. SWITCH ERROR	5
LOCK SHORT CIRCUIT	6
M. BRAKE MONITORING	7
OVERSPEED	8
KRC ERROR	9

## SOLUTIONS

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If you see these error warnings on the control board screen, to clear the error press and hold the ESC key on the control card until the error is cleared.



All permanent errors are designed to protect the Elevator Safety. Hedefsan is not responsible for any incidents occur while these errors are not taken into consideration.

## HOW TO STARTUP THE ELEVATOR - 1

### 03: Number of stops

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Enter number of stop by choosing 3. Parameter.

### 44: Counter Type Encoder

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From 44. Parameter c From 44. Parameter c type as encoder.

### 48: Encoder Divider 026

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Please enter the result of this

Equation:  $\text{Motor Speed} * \text{Encoder Pulse Number} / 60 / \text{Elevator speed}$  Enter the result into 48th parameter. Or you can download our application from Google Play Store and use it to calculate the encoder divider.

Example:  $1500 * 1024 / 60 / 1000 = 26$

### Do The Shaft Learning D:01 0.00 65842

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When you see this message on the screen, it means that you did not make the shaft learning, to make shaft learning you have the take elevator "Inspection from Shaft".

### 57: First Setup Active

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Please activate 36th and 57th parameters

Note: After Shaft learning and floors setup we will deactivate 57th parameter.

### Inspection from Shaft D:01 0.00 65000

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When the elevator is in revision mode (869 led will be off ) Bi- Stable led will be on, press and hold ESC button located on the card for 2 seconds.

Note: 817-818 magnets will be at a minimum distance of 2m.



## HOW TO STARTUP THE ELEVATOR - 2

### Encoder Reset D:01 0.00 08564

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When you see this message it means that shaft learning has started. Elevator moves in a high speed till 817 cutter and it stops at docking speed when it see ML1,ML2 magnets at the lowest floor.

### Up Learning D:02 0.60 16854

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When you see this message on the screen, it means that the first Up Learning has started. The elevator will move at high speed, slows down at a lower floor of the top floor, goes to the top floor at the docking speed, and stops when it sees ML1,ML2 magnets.

### Down Learning D:01 0.60 07568

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When you see this message on the screen, it means that the first Down Learning has started. The elevator will move at high speed till 817. It will be stopped by ML1,ML2, after that second up learning process starts.

### Up Learning D:02 0.60 24865

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When you see this message on the screen, it means that the second Up Learning has started. The elevator will learn floor zones by moving at high and down speed to every floor and will save and store the data into the memory.

### Down Learning D:01 0.60 05678

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When you see this message on the screen, the elevator will move at high speed till 817, and will move to the lowest floor at docking speed till it sees ML1,ML2. When you see "Inspection from Shaft" on the screen it means that the Shaft Learning is completely done.

### 52: Floor Descent levelling D:16 000

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This menu is used to adjust the floor settings in the down direction. Levelling can be done by entering "-" and "+" values. If the elevator is above you have to enter "-" value, and if the elevator is below you have to enter "+" value . Each number is 1 mm. Maximum of 75 mm can be corrected.

## HOW TO STARTUP THE ELEVATOR - 3

### 52:Floor Ascent levelling D:16 000

This menu is used to adjust the floor settings in the down direction. Levelling can be done by entering "-" and "+" values. If the elevator is above you have to enter "-" value, and if the elevator is below you have to enter "+" value . Each number is 1 mm. Maximum of 75 mm can be corrected.

## HOW TO SET FLOOR SETTINGS FROM IN-CAB BUTTONS?

In the table below you can find information about Floor Setting from Inside the Cabinet ".

### 36: Levelling / Active

### 57: First Setup / Active

Please activate 36th and 57th parameters.

5

Press and hold the button of your current floor.



Press and release the door opening button twice. If the cabin light is off press and hold the door opening button and pull your hand off the floor button.

1

Make up levelling by pressing the one floor above the lowest floor's button or 1st floor button.

0

Make down levelling by pressing 0 button.

NOT: When you release the door opening button all levelling setting will be stored into the memory



## Common Symbols on HD BE Control Board - 1

RST	Mains Supply
MP	Neutral Network
1	Cabin Feed Input
2	Cabin Lamp Supply
A3	Door Open Signal
A5	Door Close Signal
A15	Door Open/Close Common Signal
10A	Safety Circuit Neutral Return
120	Stop Circuit
130	Door Plug Contact Circuit
140	Door Lock Circuit
10B	Contactors Neutral Output
SHG	Inverter Error Input
ML1	ML1 Signal
ML2	ML2 Signal
141	141 Signal
142	142 Signal
RFI	Regulators Monitoring Input
RFI	Brake Monitoring Input
KRC	Feedback Input of the main contactors. The normally closed contacts of the 100 signal of the main contactor must be connected serially to this entry.

S1A-S1B	Cabin serial communication terminals (with HD Be Series)
S2A-S2B	Group Control Communication Terminals
100	Control circuits supply + 24Vdc
1000	Control circuits supply -GND
5100	Used as a common for external calls in group connections

## Common Nicknames on the HD BE Control Card - 2

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PI1	Shaft bottom reset
PI2	Bypass Input
PI3	Door A monitoring Input
PI4	Door B monitoring Input and input for brake test mode
PI5	Top Stop information (for hydraulic)
PTC	Motor thermistor, Panel thermostat, oil thermostat (Hydraulic), Brake resistor thermostat (VVVF) as long as there is a signal.

### **WARNING !!! ML1, ML2, 141, 142**

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Magnetic Switches: Signal Connections Changes According To The Type Of Elevator. ML1, ML2, 141 And 142 Is Used In Hydraulic And Vvfv Systems.

### **WARNING !!! PI1, PI2, PI3, PI4, PI5**

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PI1, PI2, PI3, PI4, PI5 these inputs can be programmed



## ACCORDING TO DRIVER TYPE HD BE CARD RELAY OUTPUTS

### Relay Outputs for Hydraulic Elevators

11	Valve Supply Voltage
RU2	Up Slow Valve
V3	Up Fast Valve
RU1	Down Slow Valve
V1	Down Fast Valve
RLC	Mains and Rescue Common Contactor Feed
KAK	Rescue Contactor Feed
SAK	Mains Contactor Feed
RPA	Up Contactor
RYA	A3 Valve Voltage
RYB	A3 Valve Output

### 3 Pin Jumper Connection in HD BE Card



If 31,32,02 and 12 Signal outputs are 100



If 31,32,02 and 12 Signal outputs are 1000





## Relay Outputs for VVF Lifts

Geared Drive (Asynchronous Machine)		Gearless Drive (Synchronous Machine)	
		Passive Rescue By Releasing Brakes	Motor Driving Active
I1	VVF Common Feed Voltage	VVF Common Feed Voltage	VVF Common Feed Voltage
RU2	Up Directional Signal	Up Directional Signal	Up Directional Signal
V3	High Speed Signal	High Speed Signal	High Speed Signal
V0	Low Speed Signal	Low Speed Signal	Low Speed Signal
V1	Revision Speed Signal	Revision Speed Signal	Revision Speed Signal
COM	(R01-R02-R03-R04)'s Common	R01-R02- R03-R04 Common	R01-R02- R03-R04 Common
R01	B Door Open Relay	B Door Open Relay	B Door Open Relay
R02	B Door Close Relay	B Door Close Relay	B Door Close Relay
R03	Programmable Output	Programmable Output	Programmable Output
R04	Nudging Output	Nudging Output	Nudging Output
RU1	Down Directional Signal	Down Directional Signal	Down Directional Signal
RPA	Main Contactors (RPA,RPB)	Main Contactors (RPA,RPB)	Main Contactors (RPA,RPB)
RPB	Main Contactors' (RPA,RPB) Feed Voltage	Main Contactors' (RPA,RPB) Feed Voltage	Main Contactors' (RPA,RPB) Feed Voltage
V2	Leveling speed input	Leveling speed input	Leveling speed input



RLC	KAK, SAK Relay input Common	KAK, SAK Relay input Common	KAK, SAK Relay input Common
KAK	Rescue Conactor `s output	Rescue Conactor `s output	Rescue Conactor `s output
SAK	Network contactor output	Network contactor output	Network contactor output
Q1-Q4	Gray Code outputs	Gray Code outputs	Gray Code outputs
Q5	ByPass active alarm output	ByPass active alarm output	ByPass active alarm output
RTA	Common Regulator coil input	Common Regulator coil input	Common Regulator coil input
RTB	Regulator coil output	Regulator coil output	Regulator coil output
S1A-S1B	Cabin Series (HD SERIES) Communication Terminals	Cabin Series (HD SERIES) Communication Terminals	Cabin Series (HD SERIES) Communication Terminals
S2A-S2B	Group Control Communication Terminals	Group Control Communication Terminals	Group Control Communication Terminals

## HD BE Terminals Card Symbols

804	In serial installation / Overload Contact
VAT	In serial installation / Fire Wrench (Fireman Switch)
YNG	Fire mode
868	Shaft switch (bottom of shaft)
869	Revision Switch (from Revision Box)

501	Parallel installation / Revision up Movement Button
500	Serial intallation 7 Revision up Movement Button
500	Parallel installation / Revision down Movement Button
500	Serial intallation / Revision down Movement Button
818	Up Obligatory Magnetic Switch.
817	Down Obligatory Magnetic Switch.
X1-X16	In / Out Controller Recorder Inputs
A-D-2G2BC	7-Segment Indicator Outputs
12	Busy Lamps
031	Downward Arrow Light
032	Upward Arrow Light
02	Out of services light
PTC	Motor thermistor, Panel thermostat, oil thermostat (Hydraulic), Brake resistor thermostat (VWF) as long as there is a signal.
DEP	Earthquake alarm contact
141	141 signal
142	142 signal
501	Revision Upward button
500	Revision Downward button
869P	Revision Key (to control card)
869K	Revision Key (from 869 terminal of the HD panel)
T11	Revision Key (from 869 terminal of the HD panel)



## HD Panel Board Symbols

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868	Revision key at bottom of Shaft
869-K	Revision key (from 869 terminal of the Hd Panel)
869-P	Revision key (to controller card)
100	Reset Buttons Feed
500	Downward Reset Button
501	Upward Reset Button
110	Safety Circuit Feed Phase Output(220v)
110-111	Panel Emergency Stop
112-112	ByPass Stop Contact
112-113	Machine Emergency Stop
113-114	Stop Shaft Cover
114-115	Regulator Stop
115-115A	Forced Top Breaker Stop
115A-116	Forced Lower Breaker Stop
116-116A	Cabin Bumper Switch Stop
116A-117	Lower Bumper Switch Stop
117-117A	Reset Switch Contact
117A-118	Shaft Regulator Pulley Stop
118-118A	Stop Bottom of Shift
118A-118B	Shaft Revision Switch

118B-119	Cabin Stop
119-119A	Cabin Revision Switch Stop
119A-119B	Parachute Contact Switch Stop
119B-120	Loose Rope Switch Stop
120-130	Door A Cabin door contact

## Nicknames on HD Board Connection Card - 2

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130-135	Door B Cabin door contact
135-136	Door B Floor Door Contact
136-140	Door A Floor Door Contact
10B	Safety Circuits Supply Neutral Output
10A	Safety Circuit Neutral Return
120	Stop Circuit Return
130	Door A cabin door contact return
135	Door B cabin door contact return
136	Door B floor door contact return
140	Door A floor door contact return



## MAGNETIC SWITCH AND MAGNETS INSTALLATION

HD BE Systems can operate by perception method in 4 different position.

That is the counter method:

Standart M0 counter systems: it is for 2 speed controller panel (deceleration distance

must be lower than half distance of the between floors) Standart M1 counter system:

it is used for 2 speed controller panel (deceleration must be lower than half distance of the between floors). ML1-ML2 counter system: it is used for VVVF and Hydraulic control panel which made the door bridging.

Magnetic Switch And Magnets Witch Is Used According The Drive Type Are Shown In The Table

Drive Type	Perception Cabin Position	Open Door Leveling	Magnets
VVVF/Hydraulic	ML1-ML 2 Encoder counter	Avaiable/Not Avaiable	30cm And 10cm Strip Magnet

### M1 and M0 Counter System Intallation

Cabin movement and floor information are perceiving by 2 tybe magnetic in the M1 and M0 counter system.

- 1 Floor counter and pass on to slow magnetic switch (SM1, Bi-Stable)
- 2 Stop at the floor magnetic switch (SJF,Bi-Stable).

Bi-Stable magnetic switch and circular magnets are used in this system.

M0 and M1 switch are used for floor counter and at the same time pass on to slow. JF (142) switch is operated as stop at the floor

- 1 Please make magnets ordering as mentioned in user guide.
- 2 Switch ends respectively connect to ML1-100 and 142-100 terminals.

## Open Door Region Magnetic Switches (ML1-ML2)

That switches duty is giving the information to controller panel that the open to the door region limit.

- 1 ML1 (Monostable)
- 2 ML2 (Monostable) (no-open in the normal)

## Magnetic switch ordering

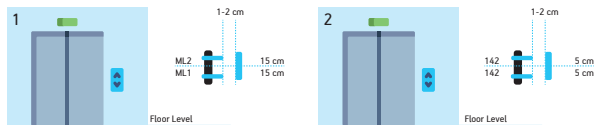
- 1 Put the magnetic switch over lop carcass and one side of the rail
- 2 Connect switch ends respectively to ML1-100 and ML2-100 terminals

30cm magnets is used for that magnetic switches. Magnet strip number is giving according the stop number.

30cm strip magnet number = stop number

## Length magnet strip ordering

- 1 Take the cabin last floor
- 2 Cabin sill must be same level of the last floor
- 3 Place this case, the midpoint of the magnetic strip facing the center of the magnet switch lanes to 1=2cm away against the magnetic switch.
- 4 Fasten with magnet glue or screw (it is enough to glue 30cm magnets) apply this process for other floors.



NOT: It is used for levelling in the encoder counter.



## Cruising magnetic switch (JF1-JF2)

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- 1 JF1 (Monostable)
- 2 JF2 (Monostable) (NO-openin normal)

That switch duty is deceleration and stopped the cabin when it is cruising. When cabin standby at the stop that switch processing releveled.

## Magnetic Switch Ordering

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Put the JF1(141) and JF2 (142) magnetic switch separately on the carcass and they will see both side of the rail. Connect switch ends respectively to 141-100 and 142-100 terminals.10cm magnets are used for that magnetic switch. Stop number is determining magnets strips.

10 cm magnets strip number=(stop number) x 4-2

## Short Magnets Strip Ordering

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Short magnet strips are divided into t2o according to way it works: stopping/ floor renovation actualized operations and acualized speed change operations

## Stopping At The Floor And Leveling Magnets

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- 1 Take the cabin last floor
- 2 Placed a magnet opposite JF1 1-2cm far away when the cabin sill level same as level of the last floor
- 3 Place the other magnets opposite JF2 1-2cm far away. Center point of the magnetic switch will see magnets 7 cm upside 3cm downside
- 4 Apply same process to all floors



## Short Magnets Strip Ordering



Placed 3cm length on the up and down direction of the magnet and magnetic switch is proportional to the distance that travels in the slow speed. This is different each elevator. But we would like it stays two switch floor level and between two magnets.

## Actualized Speed Change Operations

- 1 Place the magnets JF1 switch till upside of the deceleration distance (except top floor)
- 2 Place the magnets JF2 switch till downside of deceleration distance (except last floor)
- 3 Apply the same process to all floors
- 4 Deceleration distance is proportional to the speed of the elevator. 180 cm distance acceptable for VVVF system and 60 cm distance acceptable for Hydraulic system.



## Connections of upper and lower forced circuit breakers

In the HD BE system, you can use one of the following methods for upside down mandatory breakers.



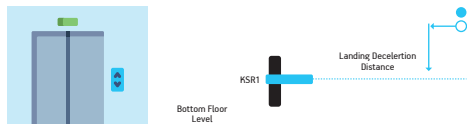
## Up and Down Compulsory Cutter Switches Connectoins

- 1 Bi-stable magnetic switch
- 2 Roller switch

When magnetic used:

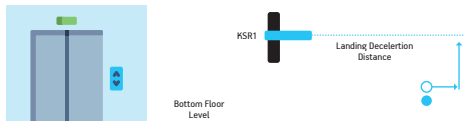
### Down Compulsory Cutter (KSR1) Connections

Take the cabin to the last floor. Place the red magnets from KRS1 magnetic switch level till upside of the deceleration distance when the cabin sill is same as last floor level. Place the black magnet a little upside of the red magnet. Deceleration distance is proportional to the speed of the elevator. 180 cm distance is for VVVF system, Encoder counter is standart 200cm,60cm distance acceptable for hydraulic. Connect roller switch ends to 100 and 817 terminals.



### Up Compulsory Cutter (KSR2) Connections:

Take the cabin up floor. Place the red magnets from KRS2 magnetic switch level till downside of the deceleration distance when the cabin sill level is same as top floor level. Place the black magnet a little downside of the red magnet. Connctet roller switch ends to 100 and 818 terminals.



When roller switch used:

## Down Compulsory Cutter (KSR1) Connections

---

Take the cabin last floor. Roller switch must cut when the cabin sill from last floor level, upside of the deceleration distance. Place the switch-lama accordingly. Deceleration distance is proportional to the speed of the elevator. 180cm distance is for VVVF system, Encoder counter is standard 200cm, 60cm distance acceptable for hydraulic. Connect switch ends to 100 and 817 terminals.

## Up Compulsory Cutter (KSR2) Connections:

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Take the cabin top floor. Roller switch must cut when the cabin sill from top floor level, downside of the deceleration distance. Place the switch-lama accordingly. Connect roller switch ends to 100 and 818 terminals.

## DOOR BRIDGING

Door movement is possible when the cabin and floor door is open by door bridging safety circuit (KOP1,KOP2,KOP3 safety relay and REN relay) on the HD BE. Thus, not need to door bridging board.

2 pcs magnetic switches (ML1-ML2) and 30cm strip magnets are used for door bridging safety circuit. ML1 and ML2 magnetic switches give the information to controller panel that the cabin is in the open to the door region limit. The door safety circuit is bridging by courtesy of bridging circuit which is on the controller board.

## OPEN DOOR RELEVELLING

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In the Hydraulic elevator, when the cabin stop at the floor the cabin level can pass the floor level because the load get into the cabin, get out the cabin or oil spill. This level changing is perceiving by the JF1 and JF2 magnetic switch and command to controller panel to fulfil changed leveling (it fulfil the changed level according the direction).



## EARLY DOOR OPENING

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In order to shorten travel time, before elevator arrives to the floor if you want to open the door, early door opening process is made when you make this process, the door safety circuit must be bridging, ML1 and ML2 magnetic switches give the information to controller panel that the cabin is in open to the door region limit and bridging the door safety circuit by courtesy of bridging circuit which is on the controller board.

### WARNING !

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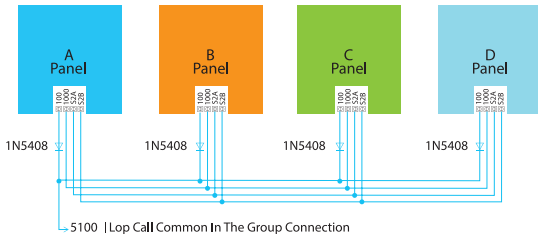
- 1 HD BE door safety circuit allow to early door opening and releveling when the cabin movement all doors open in the open region limit.
- 2 Open to the door region, allow to maximum 0.2m under and 0.2m over of the stop level and also in the full automatic doors (in-out is full automatic), open to the door region, allow to maximum 0.35m under and 0.35 over of the stop level.
- 3 Magnetic switches which is perceive door open region limit must be suitable EN81 - 1/2 14.1.2.5 item. Monostable switches should provide this suitability.
- 4 Strip magnets which is used door safety region should fasten with glue or screw.

## GROUP COMMUNICATION

HD BE can work up to 6 group lifts and doesn't need any external board. There are 2 terminals (S2A-S2B) for the group communication on the HD BE. RS-485 Serial communication protocol is used for group communication.

## Controller Panel Group Connections

In HD BE system, make connections S2A and S2B group communication ends and also make connections 100 and 1000 supply ends for group working controller panel connections.



## Lop And Button Connections For Group Working

In the Duplex, LOP is connected A controller panel and also B controller panel. In this way, if a controller panel out of the group, other controller panel continue to get record. In Triplex and 6 group working, if suppose there is one LOP between two elevator, it is enough to connect each LOP to one controller panel. In this case, a LOP will be not connected to the one of the group controller panel. However, in the three group working, if a controller panel out of the group, other controller panel continue to get record.

## Group Working Settings

Go to the "Group Duplex Select" and give the ID controller panel in the group working. Group ID can adjust as A,B,C,D,E,F,G. Each elevator ID must be different. In case the same distance record, priority belongs to low group ID elevator.

## NOTES

Our company duty is reducing all the accident risk in the elevator which has not a user risk elevator (automatic door which is complaint standard, safety precautions taken elevator like overload system). Below referred to some basic safety points of the elevator control system.

Please take into account that all precautions to elevator working in safe and therefore to minimize elevator accident risk

The lift system to be eligible for EN 81-1/2 standards as electrical, controller board, controller panel and electric connection must be suitable. HEDEFSAN guarantees that controller board compliance with the standards, but assemblers responsible for controller panel inside connections, outside connections and other electrical connections.

Emniyet devresini hiçbir şekilde dolaylı olarak emniyet tertibatı dışında bir röle yada kontakta geçirmeyiniz. Fiş ve kilit devresinin bağlantısını yaptığınız klemensleri kapı boşluklarına kapı şaselerine değmeyecek şekilde gizleyiniz. Yukarı katların kapı eşiklerinden bina temizliği yapılırken su akabileceğini, kabin içinden de sıvı maddeler dökülebileceğini unutmamak gerekir. Bu sebeple emniyet bağlantıları mümkünse yalıtımlı kutular içine konulmalı. Bu yapılmıyorsa izole bant ile izolasyonu yapılmalıdır.

Do not passing safety circuit through a relay or contactors indirectly except safety locks. Hide the terminals that you made connections of the plug, lock and they do not touch to the door and door frame space. Do not forget that water can be poured from up floor door sill when building clean up, and also liquid substances can be poured in the cabin. Therefore, safety connection must be put into isolation box if it possible, if not then should be made isolated with isolation tape.

The door frames must be connected to the ground bus bar. If you do not make grounding a bridge risk can be occurred for safety circuit (bridge can be occurred through the door frame indirectly if you do not make grounding).

Years of work, dust, dirt, grease can cause it to lose the function of your safety circuit. Do not forget to check the plug and lock the function of periodic maintenance. HD BE` s safety circuit works 220Vac. Contactors which lead to the motor is fed directly from the safety circuit. In this way it prevents involuntary movements beyond the control of the safety circuit.



# Hızı

# Keşfedin

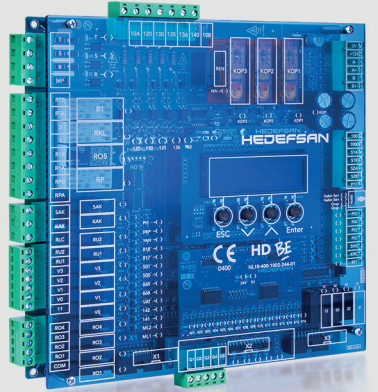
Discover Speed



# HD BE

## ASANSÖR KONTROL KARTI ELEVATOR CONTROL CARD

- + EN81-20 Tam Uyumlu
- + EN81-20 Full-Compatible
- + Kolay Aktivasyon & Kurulum
- + Easy Activation & Installation
- + Programlanabilir Giriş ve Çıkışlar
- + Programmable Inputs and Outputs



# HEDEFSAN

(0850)  
**455 1 413**

## **KONYA FABRİKA**

Büsan Özel O.S.B. Fevzi Çakmak Mh. Demir Cd.  
Doruk Sanayi Sit. No:15/D 42050 Karatay / KONYA

## **İSTANBUL ŞUBE**

Şerifali Mh. Türker Cd. Burhan Sk.  
No:21/A Ümraniye/İSTANBUL

## **ALANYA ŞUBE**

Cumhuriyet Mh. 1409. Sk. Seher Sitesi  
A Blok No:11/A Merkez/ALANYA

[www.hedefsan.net](http://www.hedefsan.net)  
[info@hedefsan.net](mailto:info@hedefsan.net)