

HEDEFSAN
ASANSÖR KONTROL SİSTEMLERİ

User Manuel

LIFT CONTROL SYSTEMS

TECHNICAL SPECIFICATIONS

Input Supply	
Input Supply Voltage	20VAC±%10
Max.Power Consumption	10W (control circuit) + Motor Power
Supply Protection	Fuse Protected (10A)
Motor Output	
Motor Voltage	24VDC
Motor Output Current	Maximum 10A
Motor Control Mode	4 Zone control
Motor Protection	Overload and short circuit protected
Encoder Input	
Encoder Type	2 Channels incremental encoder
Encoder Resolution	Any models between 100-5000 pals
Encoder Voltage	5VDC
Output Signals	
Outputs for Control Panel	Door was opened fully, door was closed fully, door jammed or photocell active output
Output Type	For 24VDC transistor max 1A
Input Signals	
Door Controller Speed Inputs	Open the door signal, close the door signal
Other Inputs	Photocell signal, NDG signal
User Interface	
Standart Board Interface	2 lines 16 letters LCD screen 4 button set
Buzzer	Buzzer
Language Selection	Turkish, English
Operation Limits	
Door Width	40 cm – 500 cm
Motor Power	Maximum 200W
Door Open-Close Speed	5 cm/s – 100 cm/s
Door Open-Close Low Speed	1 cm/s – 20 cm/s

TERMINAL NICKNAME

Motor Terminal	Motor output
Board Supply Input	18-24 VAC Supply input
Battery Terminal	Battery + end - Battery – end

Encoder Terminal

A	Encoder impact input terminal (A channel)
B	Encoder impact input terminal (B channel)
GND	(–) Supply for encoder
+5V	+5V Supply for encoder

Door Speed Terminal

COM	Common terminal for speed signal
OPEN	Open signal input
CLOSE	Close signal input
SLOW	Low speed signal input
FAST	High speed signal input

Photocell and Other Input Terminals

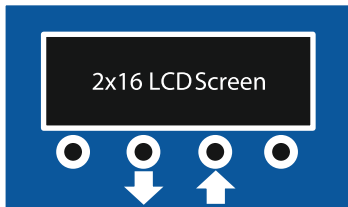
+24V	24Vdc Internal supply for input signals (+) end
GND	0Vdc Internal supply for input signals (-) end
FSL	Photocell signal input
KAT	JF signal (it specify that the door at floor or the door between floor.)
PI1	Programmable input-output

Descriptions of the Leds		
LED	Status	Descriptions
5V	On ●	+5V voltage is available. (processor supply.)
	Off ●	+5V Voltage is not available.
15V	On ●	+15V Voltage is available. (Motor driver circuit voltage.)
	Off ●	+15V Voltage is not available.
24V	On ●	+24V Voltage is available. (Motor supply)
	Off ●	+24V Voltage is not available.
E.5V	On ●	+5V Encoder supply is available
	Off ●	+5V Encoder supply is not available.
FSL	On ●	Photocell signal is available.
	Off ●	Photocell signal is not available.
KAT	On ●	Signal is available at the floor.
	Off ●	Signal is not available at the floor.
PI1	On ●	Programmable input-output signal is available.
	Off ●	Programmable input-output signal is not available.



General Warnings




- AC input supply of the card has to be between 18-24VAC voltage. More than 24VAC supply may be damage to the card.
- Transformer has to be suitable power for AC supply. Transformer power should be 10-15VA bigger than motor power.
- Door motor should be reducer 24Vdc. Motor power can be maximum 240W
- +5V supply, double channel (A and B channel), 100-5000 pals using encoder is necessary. It doesn't work with single channel encoder. Using maximum resolution encoder recommended.
- According to EN81 urgent stop, revision and automatic doors still remain in the recovery position, which remains in position. Therefore, the pump signal operation is not allowed. This type of operation can only be used to lift or not apply the old standard.
- According to EN-81, it is stable limited to a maximum closing force of 150N. It sets a very high value of the closing force can cause serious injury.
- According to EN-81 the maximum movement energy of the door in the closing direction shall not exceed 10J. This value is the result of long-term photocell cut the door is slowly closing speed is the maximum 4J.
- To be applied to the signal input on the door card tensions must not exceed 28 Vdc.
- The door card is not a safety circuit assembly. Therefore, it should not be used for safety circuit of the elevator on-board programmable outputs.
- Installation or injury caused dues to user error cannot be held responsible **HEDEFSAN®** for death or property loss. Products fail because of these errors will be out of warranty.



Key Functions On The Home Screen

	Up Key	It is used to switch between the home screen and other screens.
	Down Key	It is used to switch between the home screen and other screens.
ENTRY	Enter Key	It is used to enter menu.
EXIT	Exit Key	It is used to exit menu

Menu

 	Change the parameter.
ENTRY - EXIT	Change the value of the parameter.



INTRODUCTION TO THE DOOR

- Turn the automatic door by hand to the middle position
- Hold for 3 second to the Exit button.
- First it needs to move toward the opening direction. (Change motor direction opposite the direction of rotation. if the motor direction is the right, it will measure the height of the door closing)

MENU SETUP WITH KEYBOARD GENERAL SETUP PARAMETERS

00: Language	These parameters are available in the language of choice
Turkish	Turkish language
English	English language

01: Command Type	These parameters are available in the command type
Open-Close Signal	Open and Close inputs are active.
Only Close	Only Close input is active.
Only Open	Only Open input is active.

02:Entry Program	Programmable input and output
K20 Output	It is used to open the door signal
RLY Closed	It is used to limit output
RLY Open	It is used to limit output

03: Command Storage	Storage Last Login Command
Cancel	Command storage is cancel
Active	Command storage is active

04: Door Type	These Parameters are available door type
Automatic Door	Automatic door options
Swing Door	Swing door options

05:Pid Kp

0800

These Parameter is set by the factory manufacturer .

06:Pid Ki

0180

These Parameter is set by the factory manufacturer .

07:Pid Kd

1000

These Parameter is set by the factory manufacturer .

08: Opening High
Speed

45 cm/sn

Opening High Speed Parameter

Minimum 0,5 cm/sn
Maximum 52 cm/sn value can be entered.

09: Openin Low
Speed

03 cm/sn

Opening Low Speed Parameter

Minimum 02 cm/sn
Maximum 10 cm/sn value can be entered.

10: Opening
Acceleration Ti

1,0 s

Opening Acceleration Time

Minimum 0,1 sn
Maximum 3,0 sn value can be entered.

11: Opening
Deceleration Ram

25,0 cm

Opening Deceleration Ramp

Minimum 05,0 cm
Maximum 40 cm value can be entered.

12: Opening Deceleration Way	Opening Deceleration Way
03,0 cm	Minimum 00,1 cm Maximum 10,0 cm value can be entered.

13: Opening Jamming Level	Opening Jamming Level
2.00	Minimum 00,5 Maximum 5,00 cm value can be entered.

14: Open Holding Pressure	Open Holding Pressure
0,5 A	Minimum 0,5 A Maximum 1,5 A value can be entered.

15: Opening Spoon Speed	Opening Spoon Speed
0,5 cm/sn	Minimum 02 cm/sn Maximum 20 cm/sn value can be entered.

16: Opening Spoon Way	Opening Spoon Way
030 mm	Minimum 000 mm Maximum 100 mm value can be entered.

17: Closing High Speed	Closing High Speed
40 cm/sn	Minimum 05 cm/sn Maximum 52 cm/sn value can be entered.

18: Closing Low Speed	Closing Low Speed
03 m/sn	Minimum 02 cm/sn Maximum 10,0 cm value can be entered.

19: Closing Acceleration Time	Closing Acceleration Time
1,5 sn	Minimum 0,1 sn Maximum 3,0 sn value can be entered.

20: Closing Deceleration Ramp	Closing Deceleration Ramp
25,0 cm	Minimum 0,5 cm Maximum 40,0 cm value can be entered.

21: Closing Deceleration Way	Closing Deceleration Way
02.0 cm	Minimum 00,1 cm Maximum 10,0 cm value can be entered.

22: Closing Jamming Time	Closing Jamming Time
1.00 sn.	Minimum 00,5 cm Maximum 5,00 cm value can be entered.

23: Closing Holding Pressure	Closing Holding Pressure
0.5 A	Minimum 0,5 A Maximum 1,5 A value can be entered.

24: Closing Spoon Speed	Closing Spoon Speed
05 cm/sn	Minimum 02 cm/sn Maximum 20 cm/sn value can be entered.
25: Closing Spoon Way	Closing Spoon Way
Spoon Way 030 mm	Minimum 000 mm Maximum 100 mm value can be entered.
26: Operation Counter	Operation Counter
	Total number from the first study carried out opening-closing.
27: Demo Mode	It provides the open-close the door in the specified time
Cancel	A value can be entered between 0-10 second.
28: Company Code	Manufacturer own Company parameter
Close	Cannot be any changing in this parameter.
29: Encoder Pals	This parameter is set by the factory manufacturer .
0100	
30: Motor Rev 1	This parameter is set by the factory manufacturer.
3000	
31: Motor Rev 2	This parameter is set by the factory manufacturer.
0200	
32: Wheel Diameter	This parameter is set by the factory manufacturer.
055	
33: Motor Voltag	This parameter is set by the factory manufacturer.
24.00V	

34: Motor Current

7.00 A

This parameter is set by the factory manufacturer.

35: Factory Settings

Factory Setting

It is use to return factory settings.

MESSAGES ON THE SCREEN

The messages displayed on the operation of the doors on the main screen.

Message	Description
Door Open	Door open case
Door Close	Door close case
Door is opening	Door moving towards to opening
Door is closing	Door moving towards to closing
Closing jammed	Closing jamming detected
Opening jammed	Opening jamming detected

OPEN DOOR CRUISING PARAMETERS

These parameters are cruising curve starting from door opening on below , the door should be adjusted according to need.

Opening high speed

The maximum speed will be reached during the opening of the door.

Opening low speed

It is the speed limit before reaching the buffer opening the door.

Opening deceleration ramp

When the door accelerating (from low speed to high speed), and slows down (from high speed to low speed) is the distance of the route will be.

Opening slow way

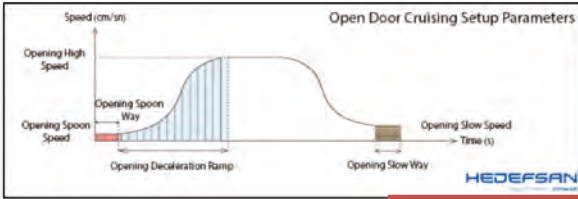
The low speed will be up to the opening of the border door buffer determines the way.

Opening spoon speed

Opening speed of the spoon.

Opening spoon way

The distance required to be soon opened and closed fully.



Door opening cruising curve

CLOSE DOOR CRUISING PARAMETERS

These parameters are cruising curve starting from door opening on below , the door should be adjusted according to need.

Closing high speed The maximum speed will be reached during the closing of the door.

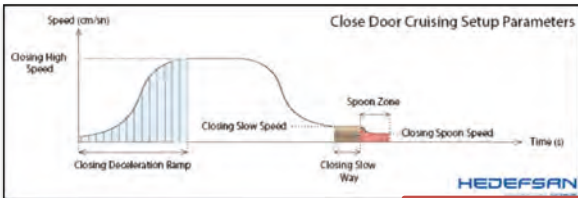
Closing low speed It is the speed limit before reaching the buffer closing the door.

Closing deceleration ramp When the door accelerating (from low speed to high speed), and slows down (from high speed to low speed) is the distance of the route will be.

Closing slow way The door at slow speed will be up to the way spoon determines way.

Closing spoon speed Closing speed of the spoon.

Closing spoon way The distance required to be spoon opened and closed fully.



Close Door Cruising Curve

THE MAXIMUM SPEED CALCULATION IN THE CLOSING

According to EN 81 the maximum energy of motion of the door in the closing direction shall not exceed 10J. This value is the result of long-term cutting photocell (nudging mode) is slow door closing speed is determined as the maximum 4J. Accordingly, suitable door closing speed can be calculated from the following formula:

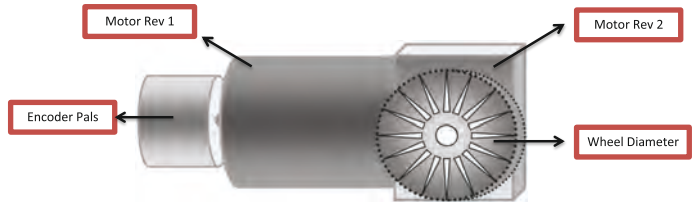
Maximum energy of motion = $(1/2) \times Km \times (Vmax^2)$

Km: The total mass of the door leaf(kg)

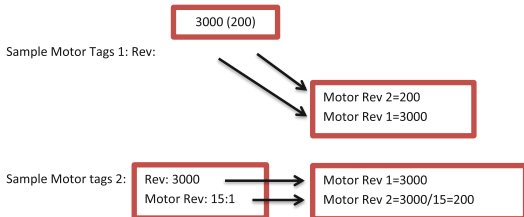
Vmax :allowed maximum closing speed (m/s)

MOTOR PARAMETERS

Encoder Pals	It is number of pulses produced in a rev of the encoder which is connected to Motor.
Motor Rev 1	Motor rev (reduction input rev)
Motor Rev 2	Reduction output rev (motor rev/ gear ratio)
Wheel Diameter	Is the diameter of the driven wheel.



The following example shows how detected motor gear ratio by the engine tags.



SPEED CONTROL SETUP PARAMETERS

Speed Control KP

It is a difference multiplier of the PI speed controller. If shaking in this panel. The parameter value is reduced and copied shaking relieved.

Speed Control KI

It is an integral multiplier of the PI speed controller.

SPEED CONTROL KP and SPEED CONTROL KI parameters that determine the reaction time of the speed control PI which is making motor rev. Because of the integral multiplier multiplies the total error should be selected much smaller according to KP. Otherwise, vibration and cruising at graphic hills may occur. KP is generally useful to choose 10 times larger than the KI.

If KI and KP are to be so high then great strain occur on the engine. If KI and KP are to be so low then loss of sensitivity occur due to the delay in the capture of the desired reference engine speed.

WORKING IN EMERGENCY STATUS

For emergencies, 2pcs batteries can connected as BATTERY + and BATTERY - ends to be connected in series 24VDC. As long as the available normal supply of the card, battery will be charged and keep it full. In case of the power failure, batteries will be activated and continue work. Issues to be considered in battery, when the battery to be consumed away or when the batteries are unable to feed engine, it will stop working.

WORKING WITH FIRE STATUS AND NDG SIGNAL

In case of fire NDG signal, which are activated by nudging mode, even if the photocell cut provides door slowly closed. During this process at the same time audible warning card (intermittent beep) occur. In this way, you can move the cabin becomes available. The goal of this mode is to prevent holding the door open.

INFORMATION MESSAGES

Given below messages regarding operation of the door on HD Door Gold Keypad Screen.

Door open

Door open case. The display will be written P: 0cm as position information.

Door close

Door close case. The display will be written door height as position information.

Door is opening

Door moving towards to opening. The display will be showed speed and position information when the door opening.

Door is closing

Door moving towards to closing. The display will be showed speed and position information when the door closing.

Door is stopping

Except door is open or closed position, you will see this information messages on the screen.

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