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HD DOOR PRO

USER GUIDE

"Inspiring Technology"

TECHNICAL SPECIFICATIONS	
Input Supply	
Input Supply Voltage	20VAC±%10
Max.Power Consuption	10W (control circuit) + Motor Power
Supply Protection	Fuse Protected (10A)
Motor Output	
Motor Voltage	24VDC
Motor Output Current	Maxsimum 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

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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 SYMBOLS	
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 Internel supply for input signals (-) end
FSL	Photocell signal input
FLOOR	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 avaible. (processor supply.)
5V	Off ●	+5V Voltage is not avaible.
15V	On ●	+15V Voltage is avaible. (Motor driver circuit voltage.)
15V	Off ●	+15V Voltage is not avaible.
24V	On ●	+24V Voltage is avaible. (Motor supply)
24V	Off ●	+24V Voltage is not avaible.
E.5V	On ●	+5V Encoder supply is avaible
E.5V	Off ●	+5V Encoder supply is not avaible.
FSL	On ●	Photocell signal is avaible.
FSL	Off ●	Photocell signal is not avaible.
FLOOR	On ●	Signal is avaible at the floor.
FLOOR	Off ●	Signal is not avaible at the floor.
PI1	On ●	Programmable input-output signal is avaible.
PI1	Off ●	Programmable input-output signal is not avaible.

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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.

- Transformator has to be suitable power for AC supply. Transformator 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.

2x16 LCD Screen

Esc   Enter
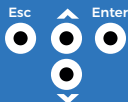
Key Functions On The Home Screen		
▲	Up Key	It is used to switch between the home screen and other screens.
▼	Down Key	It is used to switch between the home screen and other screens.
Entry	Enter Key	It is used to enter menu.
Esc	Esc Key	It is used to esc menu

Menu	
▲ ▼	Change the parameter.
Entry - Esc	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 Esc 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)

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MENU SETUP WITH KEYBOARD	
GENERAL SETUP PARAMETERS	
00: Language	These parameters are avaible in the language of choice
Turkish	Turkish language
English	English language

01: Command Type	These parameters are avaible 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:Limit Contact	Adjusting limit outputs
Open	Limit contacts are adjusted as open contact
Close	Limit contacts are adjusted as close contact

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

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

05:Pid Kp	These Parameter is set by the factory manufacturer.
0800	

06:Pid Ki	These Parameter is set by the factory manufacturer.
0180	

07:Pid Kd	These Parameter is set by the factory manufacturer.
1000	

08: Opening High Speed	Opening High Speed Parameter
45 cm/sn	Minimum 0,5 cm/sn Maximum 52 cm/sn value can be entered.

09: Opening Low Speed	Opening Low Speed Parameter
03 cm/sn	Minimum 02 cm/sn Maximum 10 cm/sn value can be entered.

10: Opening Acceleration Time	Opening Acceleration Time
1,0 s	Minimum 0,1 sn Maximum 3,0 sn value can be entered.

11: Opening Deceleration Ramp	Opening Deceleration Ramp
25,0 cm	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: Jammed Contact Type	Adjusting Jammed Outputs
open contact	Jammed contacts are adjusted as open contact
close contact	Jammed contacts are adjusted as close contact

34: Motor Current	This parameter is set by the factory manufacturer.
7.00 A	

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.

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.
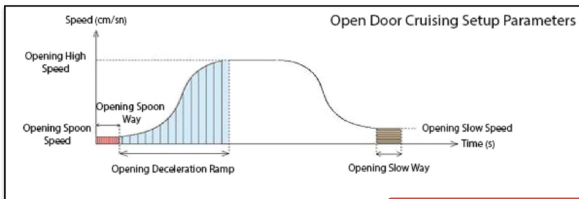
Door opening cruising curve

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

Maximum energy of motion = (1/2) x Km x (Vmax^2)
Km: The total mass of the door leaf(kg)
Vmax :allowed maximum closing speed (m/s)

MOTOR PARAMETRS

| 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.

Close Door Cruising Curve

"İlham Veren Teknoloji"

Motor Rev 1

Motor Rev 2

Encoder Pals

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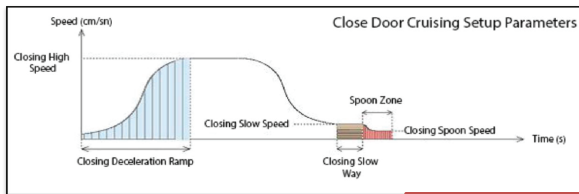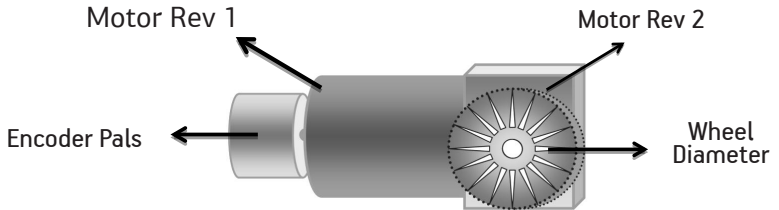
The following example shows how detected motor gear ratio by the engine tags.

Sample Motor Tags 1: Rev: 3000 (200)

Motor Rev 2=200
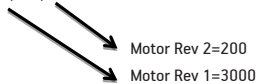
Motor Rev 1=3000

Sample Motor tags 2: Rev: 3000

Motor Rev: 15:1

Motor Rev 1=3000

Motor Rev 2=3000/15=200

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.

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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 lon as the avaible normal supply of the card, battery will be charged and keep it full. In case of the power failure, batteries will be actived 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.
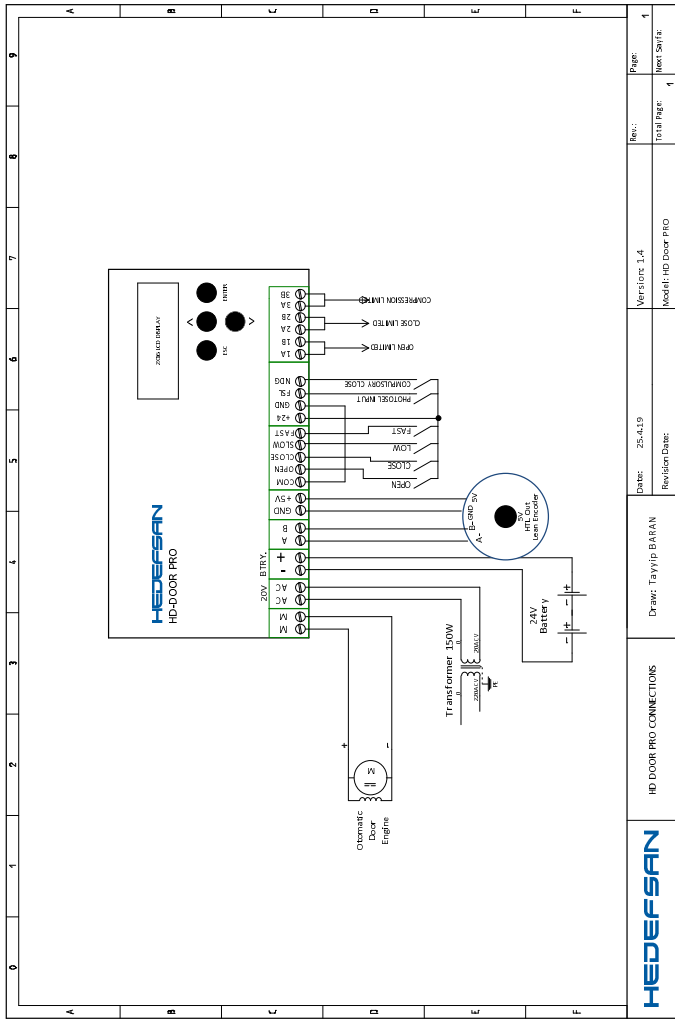
WORKING WITH FIRE STATUS AND NDG SIGNAL

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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ENTER
ESC

3B
3A — COMPRESSION LIMITED
2B
2A — CLOSE LIMITED
1B
1A — OPEN LIMITED

NO8
FSL
GND — PHOTOSEL INPUT
+24 — COMMULSORY CLOSE
FAST — FAST
SLOW — LOW
CLOSE — CLOSE
OPEN — OPEN
COM

+5V
GND — 5V
B — B-GND
A — A-
- — HTL Out
+ — User Encoder

20V BTRY.
AC
AC
M

Transformer 150W
220V(Y)
PE

24V Battery

Otomatic Door Engine

Version: 1.4
Model: HD Door PRO
Date: 25.4.19
Revision Date:
Draw: Tayyip BARAN
HD DOOR PRO CONNECTIONS
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(0850)
455 1 413

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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
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