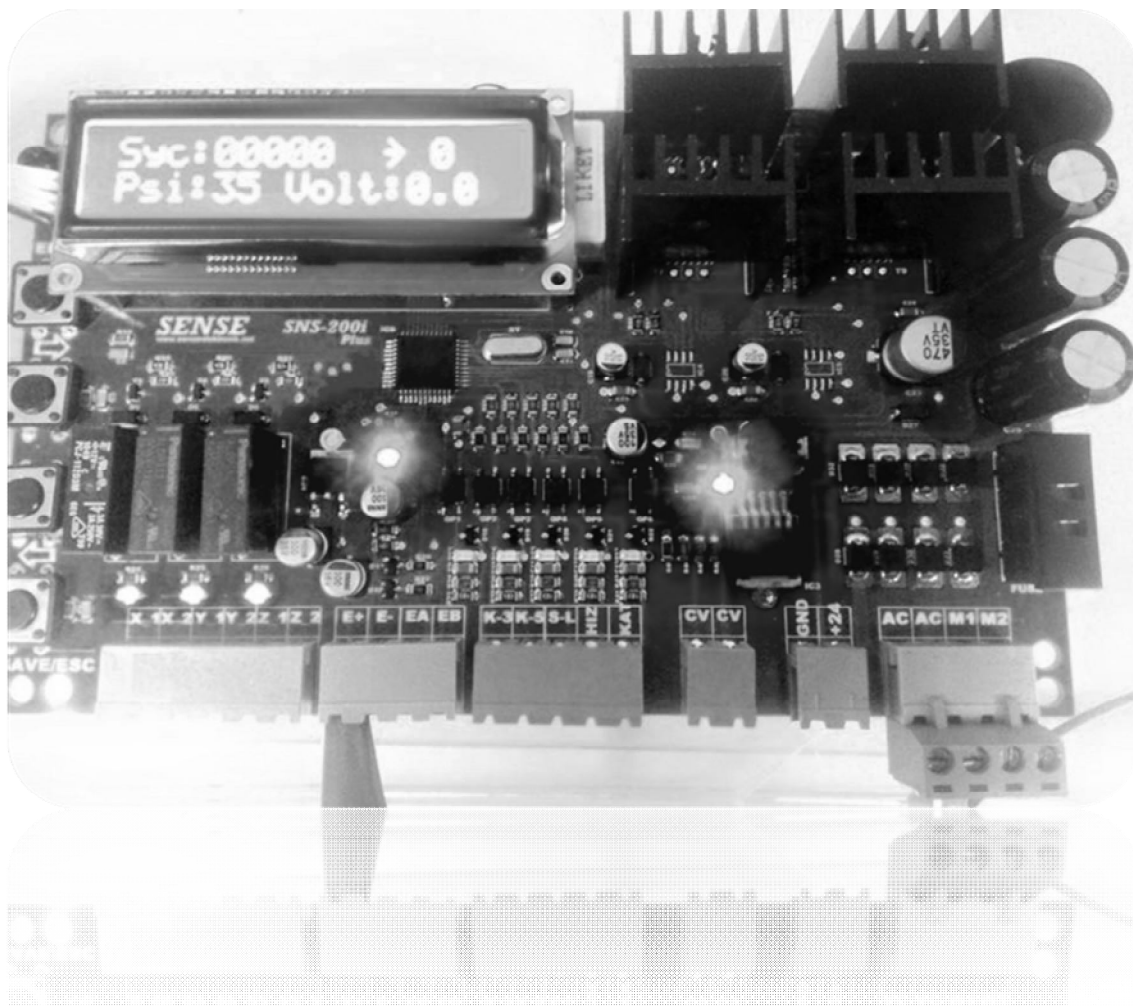


SENSE ELECTRONICS

SNS-200i VVF CONTROL

LIFT AUTOMATIC DOOR CONTROL BOARD

USERS GUIDE





SNS-200i (VVF CONTROL)

LIFT AUTOMATIC DOOR CONTROL BOARD

Instructions for use;

14 BIT CORE DEVICE

SWITCH MOD POWER (52 Khz.)

4 ZONE H – BRIDGE 28 A. MOSFET OUT 22 Khz.

PWM 2 CHANNEL ENCODER FEEDBACK

VVF CONTROL

Manufacturing company:

Sense Electronic Trade Industry Limited Company
Erciyes University Technology Development Centre
Teknopark 5th. Building, Floors-2. No: 81/ Kayseri
Tel: (+90 352) 232 11 67
Faks: (+90 352) 232 11 67
Tel: 0532 789 10 77
E-posta: sense@senseelektronik.net
Web: www.senseelektronik.net

SNS-200i door board is not a safety circuit mechanism. It is not available out of aim.

Customer Support Line: +90 352 232 11 67

WhatsApp : +90 532 789 10 77

TECHNICAL FEATURES :

Input Supply :	Input Supply voltage 22 – 24 VAC \pm % 10
Max. Power Exert :	8 Watts (control circuit) + Engine power
Supply Protection :	Fuse protection (8 - 10 A.)
Engine Output :	D.C
Engine Voltage :	24 VDC
Engine Output Current:	Max. 12.A
Engine Control Method :	4 Area H- BRIDGE (encoder feedback supply VVF control)
Engine Protection:	Short circuit protection
Encoder Type :	2-channel incremental encoder
Encoder resolution:	Any model between 100 and 1024 pulses
Encoder voltage:	5 VDC
Input signals:	24VDC Default

CAUTION:

It doesn't allowed to work with a single channel encoder!

To be applied to the instruction signal,

Voltage: 24V DC - 52V DC (to be in the range of)

Lirpomp (Cams- Pump Signals): 220V AC or 190V DC

DOOR BOARD CONNECTOR IDENTITIES :

Motor Output Terminal : M_1 and M_2 written connectors

AC supply input terminal : A_C written connectors (22-24 VAC supply input)

EA : Encoder – input tip of A

EB: Encoder – input tip of B

E- : Supply for encoder GND

E+ : +5V supply for encoder

OR : Joint tip for speed signal + 24 VDC

K_3 : On signal input

K_5 : Off signal input

C_V- C_V : Lirpomp (Cams) Input Signal 220 VAC or 190 VDC

SL : The photocell is available for emergency switching on or as fire input

FAST : Fast signal or as fire input

SLOW : Fast signal

AL-KL : Programmable input or output (Old Version)

The situation description of supply voltage LEDs :

+5V. LED (red) : Processing supply LCD and encoder supply

+24. LED (Blue + Green) : Voltage of motor driving circuit

GENERAL WARNINGS

According to EN-81, the maximum static closing force should not exceed 150N. Regulated a very high value closing force can cause serious injury.

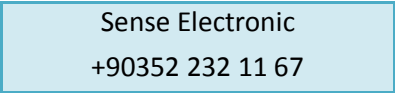
According to EN-81, the maximum kinetic energy of the door in the direction of closing must not exceed 10J.

Voltage to be applied to the signal input on the door board must not exceed 24-52 VDC

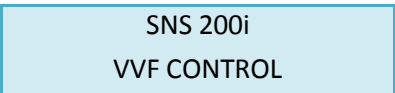
DISPLAY AND KEYPAD ON THE BOARD

SNS 200i series speed control parameters of the door control board can be controllable by means of 4 buttons and LCD display on the board.

LCD DISPLAY:

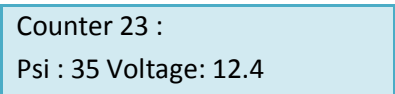


Sense Electronic
+90352 232 11 67



SNS 200i
VVF CONTROL

When the splash screen board is energized, it is an image with manufacturer company and card type. To get information about card and technical support, save version number or to see TECHNICAL SUPPORT from the menu section.



Counter 23 :
Psi : 35 Voltage: 12.4

(Picture-1)

It is displayed door opening and closing counter, door speed or the keeping pressure and engine voltage in normal screen. During the first installation to SNS 20i door control board, AUTO- TUNING is required to do (Automatic door identification).

START-UP

AUTO-TUNNING to be started, the board energized is cut off ,by pressing ENTER key and it is energized to the board. When AUTO-TUNNING message is seen on the screen, AUTO-TUNNING is started by stopping to press ENTER key.(See Picture-2).

AUTO-TUNNING
IS STARTED

Picture-2:

After warning message, in order to perform a successful and healthy way AUTO-TUNNING (automatic identification) doors automatically drawn into the zero point. When these procedures are done, necessary warning are displayed on the screen (See Picture3).

PLEASE WAIT 16

Picture3 : When the doors drawn into zero point AUTO-TUNNING (automatic identification) starts. When AUTO-TUNNING is started successfully, It is displayed AUTO-TUNNING time and ENCODER pulses number on the screen. To avoid any errors during process, the door is closed automatically once and it is opened. The values which is obtained such as door length and the number of encoder pulses is permanently stored in the processor's memory and these values are never affected by any negativity as power outage. There is no limitations in AUTO- TUNNING (automatic identification). Procedures are restarted each time and the new values are stored into memory.

THE IMPORTANT NOTE: After AUTO-TUNNING (automatic identification procedure) is done, please do not edit the mechanical setting of the doors or restart the features of AUTO-TUNNING.

2000: AUTO-TUNNING
1094 : ENC_A_PLUS

Picture: 4

If AUTO-TUNNING(automatic doors, engine and encoder identification) features performs successfully, the value which is obtained is saved into memory and return back to screen (See Picture-1). If there is not any changes in the factory default, the door is started up in factory default. Chances that you have made in factory default and speed parameters doesn't affect from AUTO-TUNNING. If these procedures which are made occur successfully, It is displayed on the main screen. The door is now ready to operate (See Picture-1)

Counter: 23
Psi: 35 Voltage: 12.4

Picture-1

When there is the main screen image on the LCD screen, MENU key is active anymore. To switch between menus, necessary MENU selection is done with RIGHT and LEFT keys. To access the menu the door should be at open position(See Pic-6).

ACCESS MENU SPEED AND PARAMETER ADJUSTMENT

In order to be provided easy switching between menus, Each menu is numbered with a menu number. In addition, MENU buttons have an audible warning which is shaped with short BEEP.

MENU-1
INSTRUCTION_SOURCES

Picture-6

After necessary Menu Selection is done, By pressing ENTER key it is entered into the currently displayed menu screen. In meantime, the name of the menu that you want to do, It will continue to be displayed at the top of the screen (See Pic-7).

INSTRUCTION SOURCE
(K3-K5) SIGNAL

Picture-7

INSTRUCTION SOURCE
LIRPOMP(CAMS) SIGNAL

Picture-8

The necessary selection is done with RIGHT and LEFT key. After the necessary selection is done, Selected value is stored into memory with ESC/SAVE keys and it is heard that saved screen warning and quite a “BEEP” sound. Then, it is return automatically to menu selection screen(Picture-9).

INSTRUCTION SOURCE
SAVED

Picture-9

Instruction Source, As default K_3 and K_5 signals become selected.

- A)** K_3 - K_5 signal (standard for all versions)
- B)** Lirpomp(Cams) Signal (Standard for All Versions)
- C)** A_L - K_L Signal (Version V 4. 1 and above)
- D)** K_3 - K_5 + A_L - K_L (Version V 4. 1 and above)
- E)** Demo Mode (Standard for All Versions)

DEMO MODE:

To start Demo Mode, Demo Mode is selected from the instruction source.

Demo_Mode
Initiating

DEMO MODE: It is designed for the manufacturer rather than users, It is purposed to make opening and closing test. When this mode is selected, All input signals are turned off. While working on the demo mode, parameters such as pressure and pressure time are active. To exit demo mode and while the door moves in the opening direction and if you press ESC key one second and stop to press the key, the door is out of demo mode.

MENU-2

ON_SLOW_POINT

When the door is in the open position, It determines the points will enter the deceleration area. (When the value is 500 the door is even further and when it is 4500 the door more behind starts to slow down)

MENU-3

ON_HIGH_SPEED

When the door is in the open position, It determines the maximum speed can get quantity. (When the value is 8 the door is slow and when it is 12 the door is much more fast). While speed adjustment do not forget to consideration of engine pulley diameter.

MENU-4

ON_START_SPEED

When the door is in the open position, it determines the door's first moment start speed (When the value is 25 the door moves more slowly and when it is 75 the door moves quickly).

MENU-5

ON_SPEED RAMPS

When the door is in the open position, it determines ramps and ways which are received until it reaches a high speed. (When the value is 2 the length of ramp is in the longest position and when it is 10 the length of ramp is in the shortest position).

MENU-6

ON_SLOW_RAMPS

When the door is in the open position, it determines ramps and ways which are received until slow speed. (When the value is 2 the length of ramp is in the longest position and when it is 10 the length of ramp is in the shortest position).

MENU-7

ON_PRESSURE_TIME

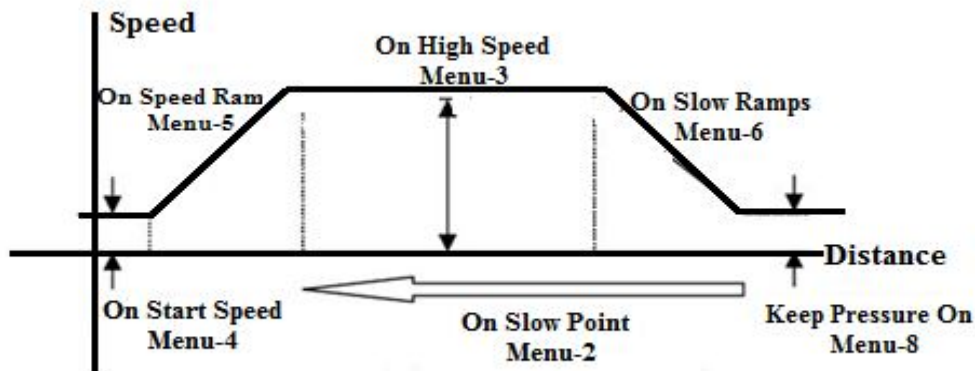
When the door is in the open position, it is time to detect the pressure time. (When the value is 100 the pressure detection is more sensitive and when it is 500 it is much longer).
(Very high selected compression repression time can cause serious injury).

MENU-8

KEEP_PRESSURE_ON

When the door is in the open position, It determines the pressure to be applied on the door. (When the value is 20 the pressure to keep open is the lowest and when it is 75 it is in the highest position).

Note: Very high value in adjusted the pressure to keep open can damage to electronic board, engine and door mechanism.



SNS 200i Plus opening course of parameters

MENU-9
OFF_SLOW_POINT

When the door is in the close position, it determines the points will enter deceleration area. (When the value is 500 the door is more further and when it is 4500 it more behind starts slow down).

MENU-10
OFF_HIGH_SPEED

When the door is in the close position, It determines the maximum speed can get quantity. (When the value is 8 the door is slow and when it is 12 the door is much more fast). While speed adjustment do not forget to consideration of engine pulley diameter.

MENU-11
OFF_START_SPEED

When the door is in the close position, It determines the door's first moment lift of speed. (When the value is 25 the door moves more slowly and when it is 75 the door moves quickly)

MENU-12
OFF_SPEED RAMPS

When the door is in the close position, It determines the ramps and ways which are received until it reaches a high-speed (When the value is 2, the length of the ramp is the longest position and when it is 10 the length of the ramps is in the shortest position).

MENU-13
OFF_SLOW_RAMPS

When the door is in the close position, it determines the ramps and ways which are received until it reaches from the high-speed to the slow-speed. (When the value is 2 the length of ramps is in the longest position and when it is 10 the length of ramps is in the shortest position).

MENU-14
OFF_PRESSURE_TIME

When the door is in the close position it is time to detect the pressure time. (When the value is 100 the pressure detection is more sensitive and when it is 500 it is much longer).

MENU-15
SCISSORS_OFF_SPEED

It is scissors-off speed. The scissors will be sufficient the velocity to overcome the spring force. (When the value is 25 the scissors-off speed is in the lowest and when it is 125 the scissors-off speed is in the highest position).

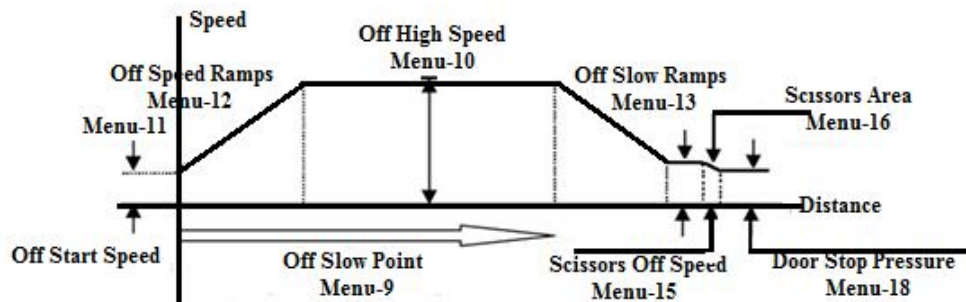
(Very high selected scissors-off speed may cause serious injury and it may damage the door mechanism)

MENU-16
SCISSORS_ON_SPEED

It is scissors-on speed. (When the value is 25 the scissors-on speed is in the lowest and when it is 100 the scissor-on speed is in the highest value).

MENU-17
SCISSORS-AREA

In order to be on and off completely it is a required area.



SNS 200i Plus closed course of parameters

MENU-18
DOOR_STOP_PRESSURE

When the door is in the close position, it determines the pressure to be applied on the door. (When the value is 20 the pressure to keep on is the lowest and when it is 75 the pressure to keep open is in the highest position).

NOTE: Very high in adjusted the pressure to keep close can damage to electronic board, engine and door mechanism.

MENU-19
BUZZER_SELECTION

The audible BEEP sound when the door opens and closes is an open and close selection

ACTIVE : Beep

PASSIVE: No Beep

MENU-20
COUNTER_RESET

On-off door counter is protected by a special password in the memory. When you want to reset you will be prompted to enter 2 digits password. When the password is right it will return to menu screen by resetting the counter. When the password is wrong, it is displayed wrong password alert on the screen.

MENU-21
DOOR_ID_SPEED

The door identification is also the speed of AUTO-TUNNING. (In cases where the speed is not enough or when the current power is not enough to off the scissors in the moment of door identification). (When the value is 60 it is in the lowest and when it is 125 it is in the highest)

MENU-22
INST_FAC_DEFAULT

Setting that you have made are deleted and return install factory default. As pressing ENTER key, it is entered into Menu and it will seen that two options which are specified YES or NO

INST_FAC_DEFAULT
YES NO

When this option on the screen, if you press LEFT Key it returns install factory default
When this option on the screen if you press RIGHT Key it doesn't install factory default. In order to exit without making any changes it is enough to press ESC.

( : Left Key  : Right Key)

MENU-23
TECH_SUPPORT

In this menu, It is displayed the manufacturer telephone numbers and webside addresses. If you want to get information about the door and board, you can get support from telephone numbers which are written.

NOTE: In cases where is necessary User Guide is downloaded from this website www.senseelektronik.net

ERROR MESSAGES AND POSSIBLE ERRORS SITUATIONS

When a fault is detected about encoder it is alerted both on screen and audible alert. When this error is detected where the door is, it is stopped without any movement by blocking all on-off signals. After the necessary controls are done cut off the energy of the board and restart it.

COMPRESSION DETECTION

It is displayed whether it is in the on direction or in the off direction on the screen. The number of compression detection in the on and off direction is limited to 8. If is detected a compression 8 times in a row by blocking all on-off signals it is brought the reverse direction to the door compression and it is expected the necessary intervention.

OFF-COMPRESSION

A mechanical failure can be in the door
It can be kept in the compression time
Encoder may be malfunctioned.
Input supply voltage may be low.

ON-COMPRESSION

1 - A mechanical failure can be in the door
2- It can be kept in the compression time
Encoder may be malfunctioned.
Input supply voltage may be low.

WHEN THE DOOR DOESN'T MOVE

Make sure that the energy is in the board. If there is an energy 12V and 15V LED should be illuminated. If the LED are not illuminated, measure the 22VAC input supply. If there is input voltage, control glass fuse on the board. Check engine power connection of the M2-M1. Check Instruction Source Selection from the Menu. If Instruction Source Selection is selected as K_3-K_5 make sure that there is on- off signals. If there is no off-on signals the door becomes motionless in the zero point.

DOOR SLAMMING

Make sure that AUTO-TUNNING is done. Make sure that the speed settings are done correctly. Check encoder connections. Make sure that the pressure to keep is not high.

WHEN THE DOOR GIVES COMPRESSION IN THE FORWARD AND BACK DIRECTION

Make sure whether as a mechanical compression in the door. Very little value can be entered in the time. Supply voltage can be too low.

AFTER THE DOOR IS OPENED AND CLOSED COMPLETELY AND IF IT COMES BACK 2-3CM AND IT WORKS TO OPEN AND CLOSE

The pressure to keep open-close or the scissors-off speed are kept at very low values and the door spring can't defeat. Please try again gradually increasing the pressure to keep open-close and the scissors-off speed. If this fault varies according to the boards, check the exterior door spring in the relevant boards.

EVENIF THERE IS NO MOTION IN THE DOORS BOARD AND ENGINE IF THERE IS A HEAT

Keeping open and close or the scissors-off speed are selected too high. As checking, make it less gradually.

IMPORTANT NOTE : For the most healthy and long lasting operation, test and try as gradually increasing from the highest to the lowest parameters values. The values which is obtained you can register to be used the last page in the test TEST and OPINION.

