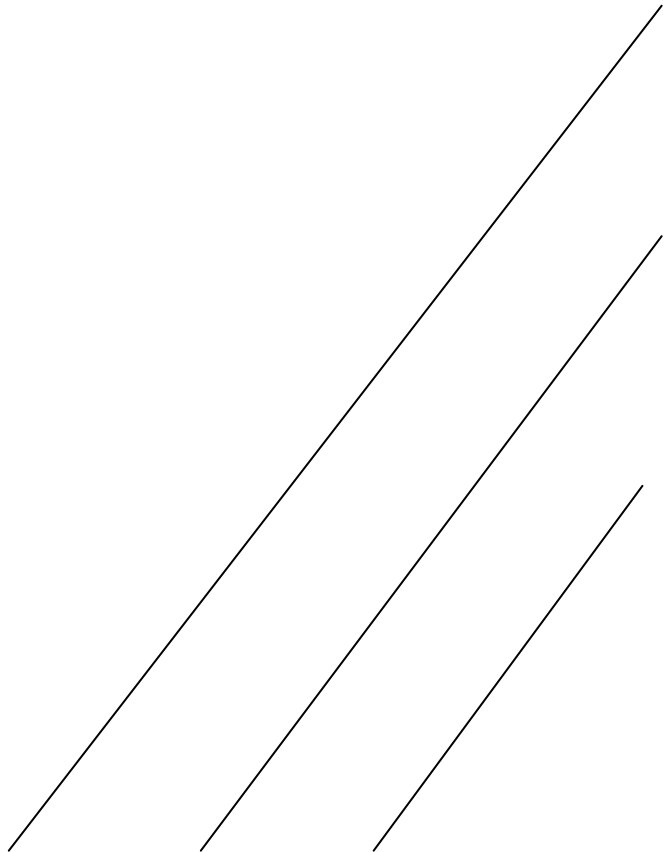


**PROGRAMMING SOFTWARE FOR
SYNCHRONOUS SERIAL ENCODERS
SS / SSM / SAM / SMS / STS / SMM /
STM**

REV 1.2



Foreword

The software produced by Hohner Automazione s.r.l. allows to program the parameters of a single turn and multi turn serial encoder:

SS, SSM, SAM, SMS, STS, SMM, STM

by means of a personal computer provided with RS232 standard serial interface.

The software can be used as diagnostics to display the encoder values.

Note: to change the encoder parameters, connect the encoder serial interface with the computer interface: the communication between encoder and PC occurs automatically through software acknowledgement.

Installation

Copy the files from the floppy disk enclosed into the work directory.

Connect the encoder programming pins with the computer COM1
(Enter: Type SXX_CONF.TXT to display the wiring diagram)

Launch the program SSI_PC13.EXE (SSI_PC14 for 8192 resolution) and press ENTER.

If another COM is to be used, launch the program by entering
SSI_PC13 / x (2<x<4).

Press any key to access the work menu:

N.B. if the encoder is not connected or powered, the following message will be displayed:
Encoder not Connected

Work menu

The work menu page shows the followings terms:

Relative Position:

frame indicating the encoder relative position according to the offset value set. The values are given in decimals:

- Single turn: Relative position of the single turn part
- Multi turn: Relative position of the multi turn part
- Position: Relative position

Absolute Position:

frame showing the encoder absolute position. The values are given in decimals:

- Single turn: Absolute position of the single turn part
- Multi turn: Absolute position of the multi turn part
- Position: Absolute position

Configuration:

frame showing the encoder parameter configuration:

- Direction: Encoder rotation direction
 - a) Up: increase
 - b) Down: decrease
- Enc. Code: Encoder code
 - a) Binary/Gray/: Binary, Gray
- N. Bit Data: Bit number of the datum (12-20-24)
- N. Bit ST: Bit number of the datum of the single turn (max 12)
- N. Bit MT: Bit number of the datum of the multi turn (max 12)
- N. Bit AUX: Number of check or preset auxiliary bits (max 6)
- miniCLKFreq: Minimum frequency of the synchronisation clock (16 Khz or 80 Khz) according to wich the reset time is calculated ($1/\text{miniCLKFreq}$)
- Set Mode (see note for SSI protocol versions pag. 7)
- Ver.SW Enc: 1.1 indicates the release of the software being used

Data MT:

Display the relative position of the multi turn expressed in binary code

Data ST:

Display the relative position of the single turn expressed in binary code

Aux:

Displays the condition of the auxiliary bits (check and preset)

Data MT + Data ST + Aux from the **FRAME** (message)

Bit Aux Function:

Indicates the function of the auxiliary bits

Offset:

Indicates the deviation with reference to the absolute value; value are expressed in decimals

Single turn: Deviation of the single turn as to the absolute 0 position

Multi turn: Deviation of the multi turn as to the absolute 0 position

Position: Total deviation as to the absolute 0 position

Preset:

Alarm / Control that can be set any values

Preset 1:

Indicates the first preset value set; value are expressed in decimals.

Single turn: Value of preset 1 of the single turn as to the absolute 0 position

Multi turn: Value of preset 1 of the multi turn as to the absolute 0 position

Position: Total value of preset 1 as to the absolute 0 position

Preset 2:

Indicates the first preset value set; value are expressed in decimals.

Single turn: Value of preset 2 of the single turn as to the absolute 0 position

Multi turn: Value of preset 2 of the multi turn as to the absolute 0 position

Position: Total value of preset 2 as to the absolute 0 position

Parameter programming

Parameters are programmed by means of the controls in “Help” frame

Parameters are programmed by using the controls in the “Help” frame.

By pressing **Alt+C**, it is possible to enter the “configuration” frame:

By pressing $\uparrow\downarrow$, it is possible to move through the fields of the configuration menu

By pressing $\rightarrow\leftarrow$, it is possible to select the desired setting in each field

Press “enter” to confirm the values entered

Press “esc” to exit the configuration menu without confirming the values entered

By pressing **Alt+F**, you enter the Bit Aux Function menu:

By pressing $\uparrow\downarrow$, it is possible to move through the fields of the Bit Aux Function menu

By pressing $\rightarrow\leftarrow$, it is possible to select the desired setting in each field

Each of the 6 auxiliary bits can be set as follows:

LOW: the bit always takes on the value 0

HIGH: the bit always takes on the value 1

PARITY ADDED: the bit is 1, if the sum of the frame bits is even (0)

PARITY ODDDED: the bit is 1, if the sum of the frame bits is odd (1)

< PR1: the bit is 1, if the encoder is in a lower position as to preset 1

<=PR1: the bit is 1, if the encoder is in a lower position as to preset 1 or in the same position

= PR1: the bit is 1, if the encoder is in the same position as the preset 1

=>PR1: the bit is 1, if the encoder is in a higher position as to preset 1 or in the same position

> PR1: the bit is 1, if the encoder is in a higher position as to preset 1

<> PR1: the bit is 1, if the encoder is in a different position as to preset 1

Press “enter” to confirm the values entered

Press “esc” to exit from the Bit Aux Function menu, without confirming the values entered.

The values referring to Preset 1 can also be set for Preset 2

N.B. In order to have the auxiliary bits on the output frame (AUX part), it is necessary to set the number of bits to be enabled from the configuration menu, N. Bit Aux field.

Ex. No. of auxiliary bits: 1
Bits in the frame: Bit called "0"

Ex. No. of auxiliary bits: 4
Bits in the frame: Bit called "0"
Bit called "1"
Bit called "2"
Bit called "3"

By pressing **Alt + 0** you set or reset the offset value

By pressing **Alt + 1** you set or reset the Preset 1 value

By pressing **Alt + 2** you set or reset the Preset 2 value

Exit from the program

Press "esc" to exit from the program.

Note for SSI protocol versions:

After a careful analysis of the existing SSI protocol types, Hohner A. decided to implement all protocols required by the different acquisition cards available on the market in its programmable encoders provided with synchronous serial interface.

The encoders series SMS, SMM, SCS, SCM, SS, SSM implement said protocols and are provided with a management software called: "SSI_PC13.exe".

To set the protocol type follow these instructions:

- start the SSI_PC13.exe program
- press Alt + C simultaneously
- press End or move to "Set Mode" using the arrow keys
- set the mode according to the following criterion:

a) Version **12Bit, left-packaged** (fixed position of MSB bit): select Mode1;

b) Version **13Bit, right-packaged** (fixed position of LSB bit): select Mode2

c) Version **13Bit, left-packaged** (fixed position of MSB bit): select Mode1 in "Set Mode" and select 1 in "N. Bit AUX", press Enter.

Press Ctrl + F simultaneously to edit auxiliary bits (aux), move to the first bit with the right/left arrow keys and select "LOW", press (Enter) to confirm.

HOHNER AUTOMAZIONE SRL

PIAZZALE COCCHI, 10 21040 VEDANO OLONA (VA) -

TEL. +039 0332 866109 - FAX +039 0332 866066

<http://www.hohner.it> e-mail:hohner.info@hohner.it

ITALY